SAMSUNG TECHWIN

NETWORK VIDEO RECORDER

User Manual

SRN-1000

CE

use-IP
www.use-ip.co.uk
01304 827609

SAMSUNG

Network Video Recorder
User Manual

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❖ **Design and specifications are subject to change without prior notice.**

❖ **The default password can be exposed to a hacking thread so it is recommended to change the password after installing the product.**
Set password for your wireless network if you use the product with a wireless router. Being not protected with password or using the default wireless router password may expose your video data to potential threat.
Note that the security and other related issues caused by the unchanged password shall be responsible for the user.

IMPORTANT SAFETY INSTRUCTIONS

Read these operating instructions carefully before using the unit.
Follow all the safety instructions listed below.
Keep these operating instructions handy for future reference.

1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not use this apparatus near water.
6) Clean only with dry cloth.
7) Do not block any ventilation openings, Install in accordance with the manufacturer's instructions.
8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9) Do not defeat the safety purpose of the polarized or grounding- type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. if the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments/accessories specified by the manufacturer.
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Standards Approvals

FC CE

- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
  This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

BEFORE START

This manual provides operational information necessary for using the product and contains a description about each component part and its function as well as menu or network settings.
You have to keep in mind the following notices :

- SAMSUNG retains the copyright on this manual.
- This manual cannot be copied without SAMSUNG's prior written approval.
- We are not liable for any or all losses to the product incurred by your use of non-standard product or violation of instructions mentioned in this manual.
- Prior to opening the case, please consult a qualified technician first. Whenever this is needed power must be removed from the unit.
- Before installing additional HDD or connecting the SATA device to this product, check if it is compatible with the product.

Warning

Battery

It is essential that when changing the battery in the unit, the replacement battery must be of the same type otherwise there may be a possibility of an explosion.

The following are the specifications of the battery you are using now.

- Normal voltage : 3V
- Normal capacity : 170mAh
- Continuous standard load : 0.2mA
- Operating temperature : -20°C ~ +85°C (-4°F ~ +185°F)

CALIFORNIA USA ONLY
This Perchlorate warning applies only to primary CR (Manganese Dioxide) Lithium coin cells in the product sold or distributed ONLY in California USA.
"Perchlorate Material - special handling may apply,
See www.dtsc.ca.gov/hazardouswaste/perchlorate."

Caution

- Connect the power cord into a grounded outlet.
- The Mains plug is used as a disconnect device and shall stay readily operable at any time.
- Batteries shall not be exposed to excessive heat such as sunshine, fire or the like.
- Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions.

Only used at altitude not exceeding 2000m.

System Shutdown

Turning off the power while the product is in operation, or undertaking improper actions may cause damage or malfunction to the hard drive or the product.
For safe powering off, click <**Shutdown**> button on top right corner of the Web Viewer and confirm on prompted popup by clicking <**OK**>, and then disconnect the power cable.
You may want to install a UPS system for safe operation in order to prevent damage caused by an unexpected power stoppage. (Any questions concerning UPS, consult your UPS retailer.)

- If powered off abnormally, restarting may take more time for restoring data from hard disk drive for proper operation.

Operating Temperature

The guaranteed operating temperature range of this product is 0°C ~ 40°C (32°F ~ 104°F).
This product may not work properly if you run right after a long period of storage at a temperature below the guaranteed one.
Prior to using a device that has been stored for a long period in low temperatures, allow the product to stand at room temperature for a period.
Note that the internal HDD may not operate properly at a lower temperature below 0°C. Carefully keep the temperature appropriately.

Ethernet Port

This equipment is in door use and all the communication wirings are limited to inside of the building.

Security Precautions

The default password can be exposed to a hacking thread so it is recommended to change the password after installing the product.
Set password for your wireless network if you use the product with a wireless router. Being not protected with password or using the default wireless router password may expose your video data to potential threat.
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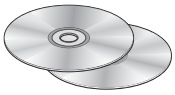
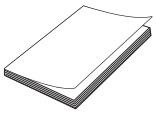
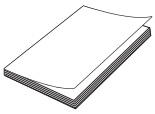
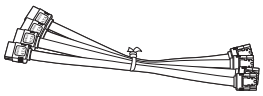
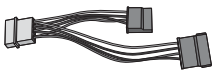
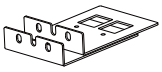
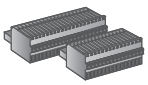
FEATURES

The product records video and audio from network cameras to a hard disk, and enables playback from the hard disk. It also provides remote monitoring environment for video and audio over the network using a remote computer.

- VGA, 4CIF, record in a max of 2592x1944 (5M pixel) supported
- Record and play video
- Record and play audio
- Supports ONVIF standard and RTP / RTSP protocols
- Display the HDD operation status by HDD SMART
- HDD overwrite enabled
- Mass-storage HDD supported using eSATA
- Various Recording Modes (Normal, Event, Scheduled Recording)
- Alarm Input / Output
- Live monitoring of Network camera supported.

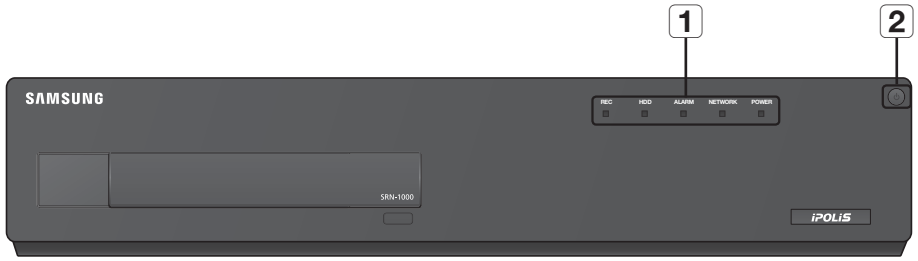
Package Contents

Please unwrap the product, and place the product on a flat place or in the place to be installed.
Please check the following contents are included in addition to the main unit.

		
NVR	Power Cable	Network Viewer Software / User Manual and Installation Software CD
		
User Manual	Quick Guide (optional)	SATA Cable
		
Additional SATA power cable	Bracket Rack	Bracket Fixing Screw
		
HDD Fixing Screw	Terminal Block	

■ For a model with no built-in HDD, one SATA cable and 3 screws for fixing the HDD will be added by default.

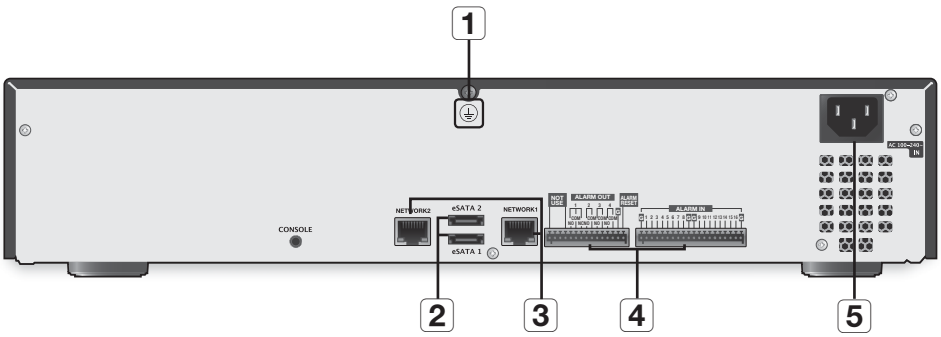
PART NAMES AND FUNCTIONS (FRONT)



Part Names		Functions
1	LED Indicator	**REC** : Lights on when recording is in progress.
		HDD : Displays the normal access to HDD. LED turns on when accessing the hard disk.
		ALARM : Lights on when an event occurs.
		NETWORK : Displays both network connection and data transfer status.
		POWER : Displays the power ON/OFF status.
2	Power	Used to turn the product ON.

▪ When powering on and booting up the product, you can check the status according to the [**REC**] and [**ALARM**] indicators. (page 26)

PART NAMES AND FUNCTIONS (REAR)



Part Names		Functions
1	Ground	Port to connect a separate earth-grounding cable. ▪ Add a separate earth-grounding cable to use your product safely.
2	eSATA 1/2	Ports used for external storage device connections.
3	NETWORK 1/2	NETWORK connector port.
4	ALARM	- ALARM IN : Alarm input ports. - ALARM RESET : Alarm Reset port - ALARM OUT : Alarm output ports.
5	Power	Power connection port.

▪ [**CONSOLE**] is designed for the service repair purpose only.

installation

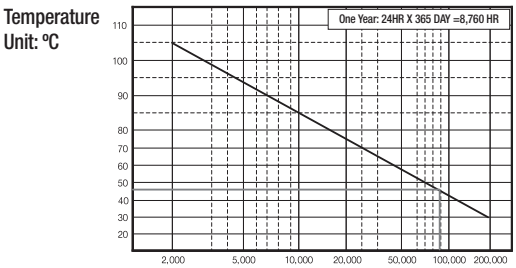
Please take note of the followings before using this product.

- Do not use the product outdoor.
- Do not spill water or liquid in the connection part of the product.
- Do not impose the system to excessive shock or force.
- Do not pull out the power plug forcefully.
- Do not disassemble the product on your own.
- Do not exceed the rated input/output range.
- Use a certified power cord only.
- For the product with an input ground, use a grounded power plug.

CHECKING THE INSTALLATION ENVIRONMENT

This product is a top-notch security device that is equipped with a high-capacity HDD and other key circuit boards.

Note that an excessive internal temperature of the product may cause a system failure or a shortened product life (see the right figure). Keep in mind the following instructions before installing the product.



[Figure 1]

When mounting the product on a rack, comply with the following instructions.

1. Please ensure that the rack inside is not sealed.

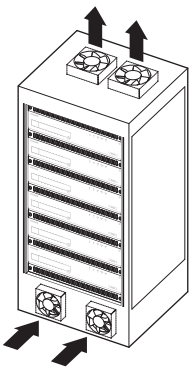
2. Please ensure the air is circulated through the inlet/outlet as shown in the picture.

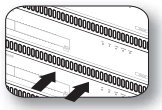
3. If you pile up the prudcts or other rack-mount devices as shown in figure 2, secure room for ventilation or install a vent.

4. For natural air convection, place the inlet at the bottom of the rack and the outlet on top.

5. It is strongly recommended that a fan motor is installed at the inlet and the outlet for air circulation. (Please fit a filter at the inlet to screen dust or foreign substances.)

6. Please maintain the temperature inside the rack or surrounding areas between 0°C ~ 40°C (32°F ~ 104°F) as shown in the figure 1.





[Figure 2]

Rack Mount Instructions - The following or similar rack-mount instructions are included with the installation instructions :

A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

C) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

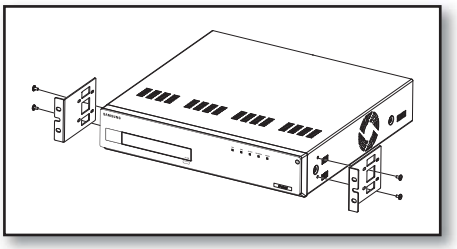
D) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

RACK INSTALLATION

Install the Bracket-Rack as shown in the figure, and then fasten the screws on both sides (2 screws on each side).

- Fix the screws not to be loosened by vibrations.



HDD ADDITION

Make sure to unplug the power cord from the wall outlet to prevent possible electric shock, injury or product damage. Please consult your provider for further information on HDD installation since improper installation or settings may damage the product.

- Number of HDDs supported : Up to 8
- Make sure to unplug the power cord from the wall outlet before proceeding with the installation.
- HDD-equipped model is installed with one HDD when shipped.

- **Cautions for data loss (HDD care)**
  Please pay attention so that the data inside the HDD is not damaged.
  Before adding a HDD, please check the compatibility with this product.
  HDD is vulnerable to malfunction due to its sensitive nature especially against shock when operating.
  Please ensure that the HDD is free from such shock.
  We are not liable for any damage to the HDD incurred by user's carelessness or miss use.

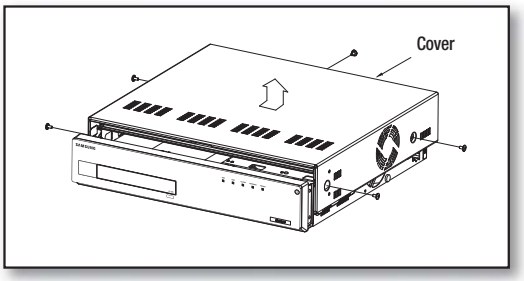
- **Cases might cause damage to HDD or recorded data**
  To minimize the risk of data loss from a damaged HDD, please backup data as often as possible.
  If exposed to shock when disassembling or installing, data stored in the hard disk may be damaged.
  A sudden power failure or turning off the product while in HDD operation may damage the hard disk drive.
  HDD or files stored inside may be damaged if the main body is moved or impacted during the HDD operation.

Cautions when installing a HDD

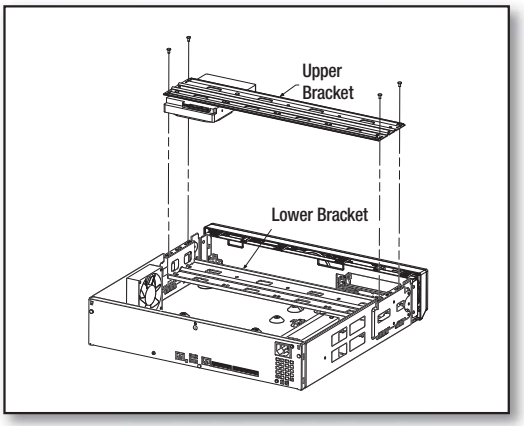
1. When adding a HDD, ensure that the cable does not get caught or the insulation does not come off.
2. Pay attention so as not to lose the disassembly screws or accessories.
   - If the screws or accessories are not put together correctly, the product may breakdown or not operate properly.
3. Please check the HDD compatibility before adding a HDD.
   - Please contact your nearest dealer to obtain the list of compatible devices.

installation

1. First, loosen the screws on both sides and remove the cover.

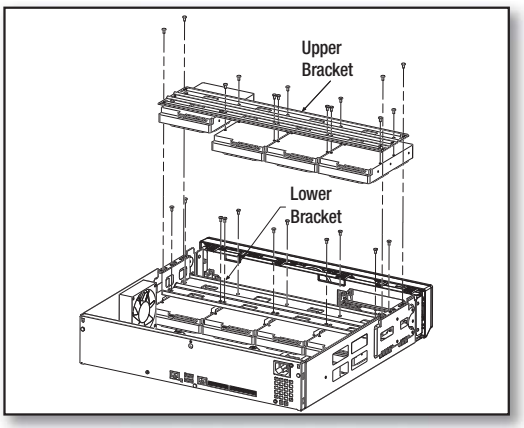


2. Loosen the screws (x4) in the left/right and upper sides and remove the upper brackets.

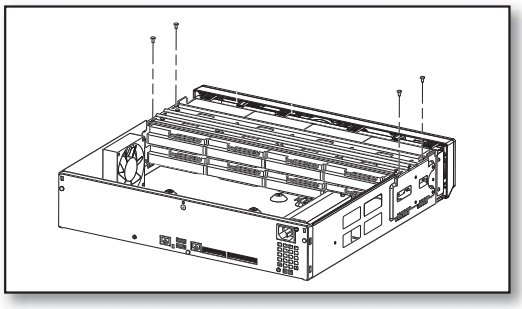


3. Install HDDs (x4) on the lower bracket and fix them with screws.

4. Install HDDs (x4) on the upper bracket and fix them with screws.

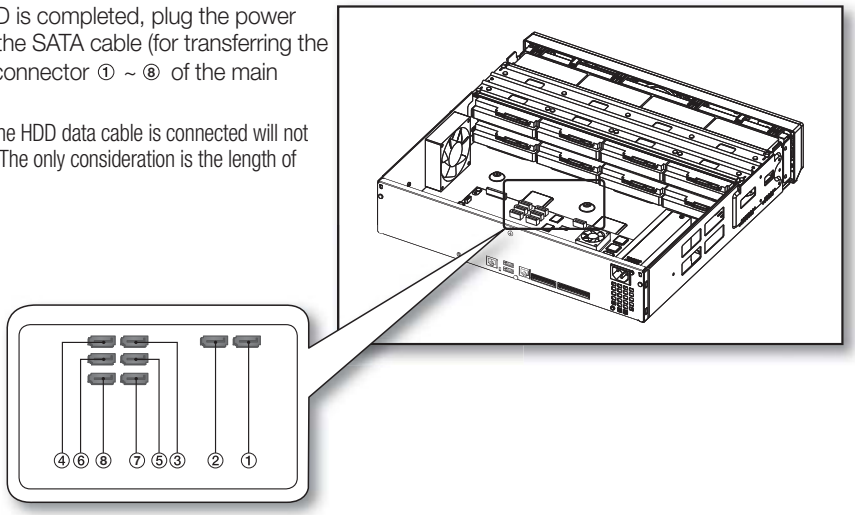


5. When the installation of additional HDDs is done, insert the lower and upper brackets into the NVR and fix them with the provided screws.

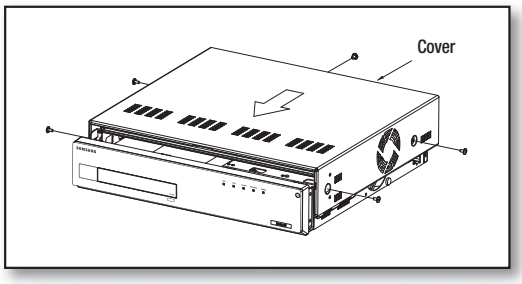


6. When adding a HDD is completed, plug the power cable and connect the SATA cable (for transferring the HDD signal) to the connector ① ~ ⑧ of the main board.

- Note that the order the HDD data cable is connected will not affect the operation. The only consideration is the length of each cable.

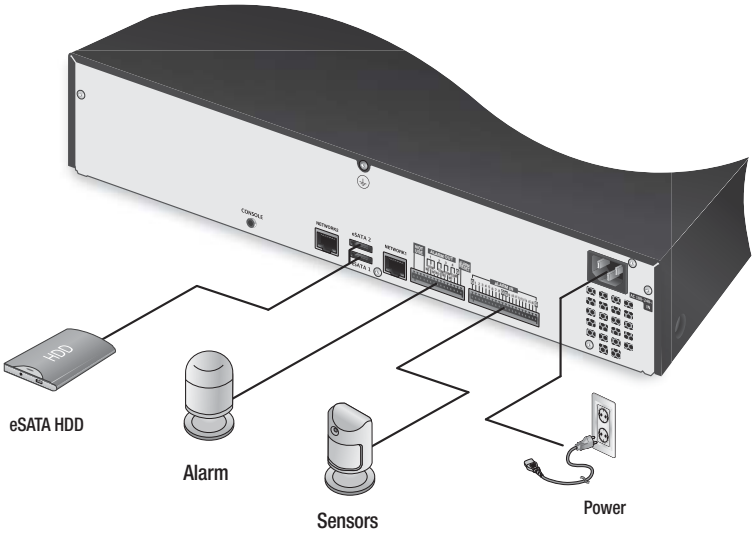


7. Check if the connectors are properly connected and there is no problem with wiring, and close the cover and fix it with screws.



connecting with other device

CONNECTING TO AN EXTERNAL DEVICE



- Unrated or improper power source may cause damage to the system. Ensure that you use only the rated power source before pressing the POWER button.

Connecting External eSATA HDD

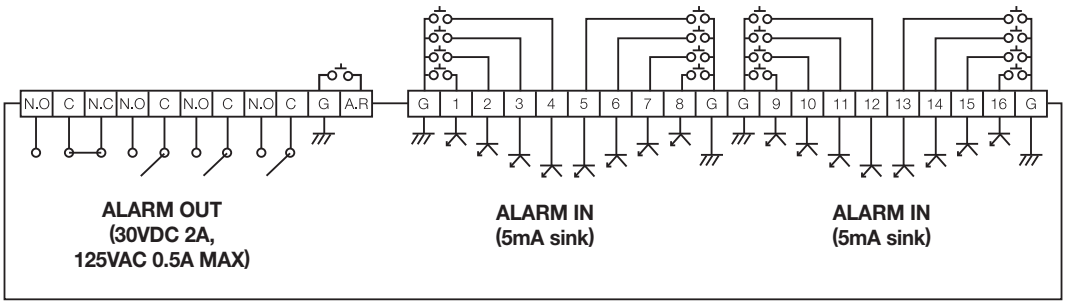
External eSATA ports are provided on the rear panel by factory default.
If connected to the system, the external eSATA HDD can be recognized and configured in "**Menu Setup** > **Device** > **Storage Device**".

- Use a cable shorter than 1m for the external eSATA HDD connections.
- The power for an external eSATA storage will be supplied separately.
- Unexpected disconnection to a device in use which is connected via eSATA may restart the system. Check whether the device is in use before disconnecting it.

Connecting the Alarm Input/Output

The Alarm In/Out port at the back is composed of the following.

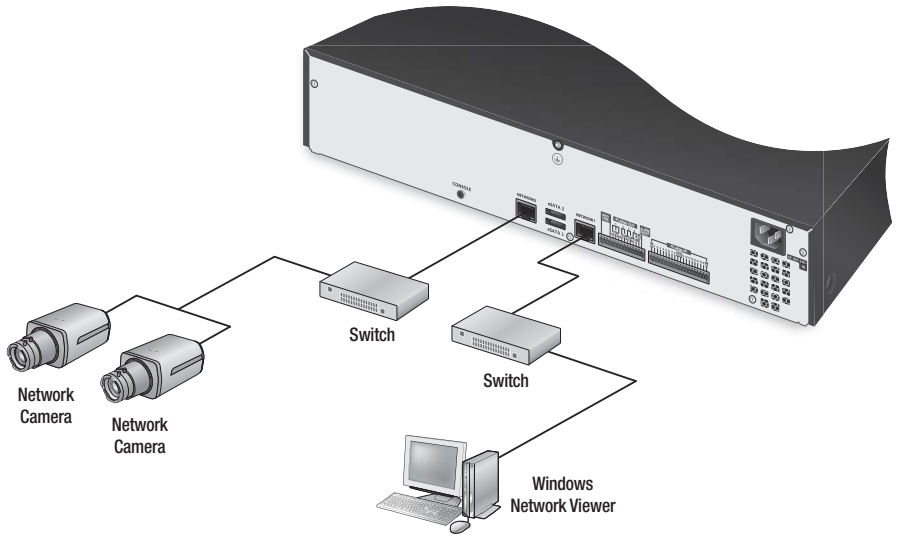
- ALARM IN 1 ~ 16 : Alarm Input Port
- ALARM RESET : On receiving an Alarm Reset signal, the system cancels the current Alarm Input and resumes sensing.
- ALARM OUT 1 ~ 4 : Alarm Output Port



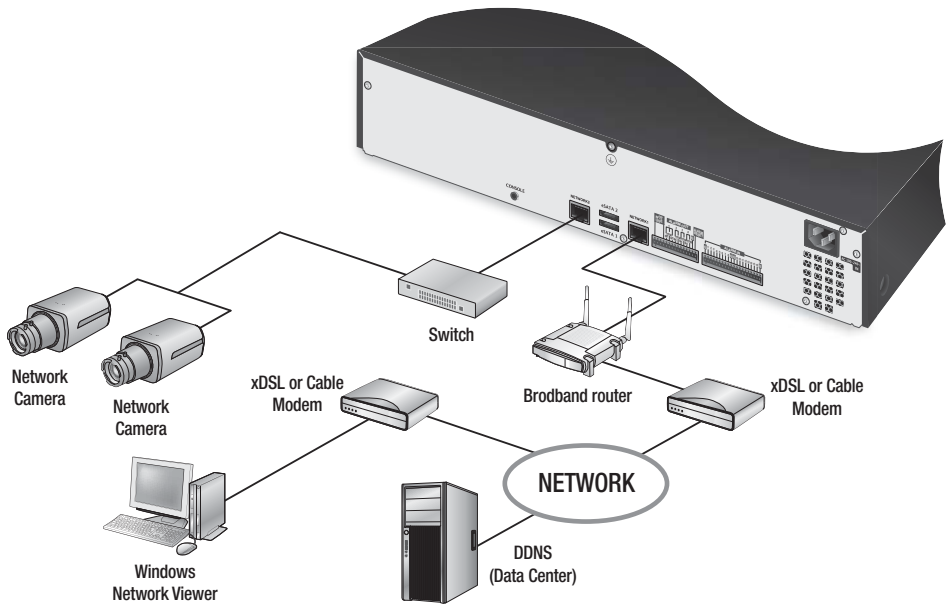
CONNECTING THE NETWORK

■ For more information about network connection, refer to "**Network Configuration**". (Page 76)

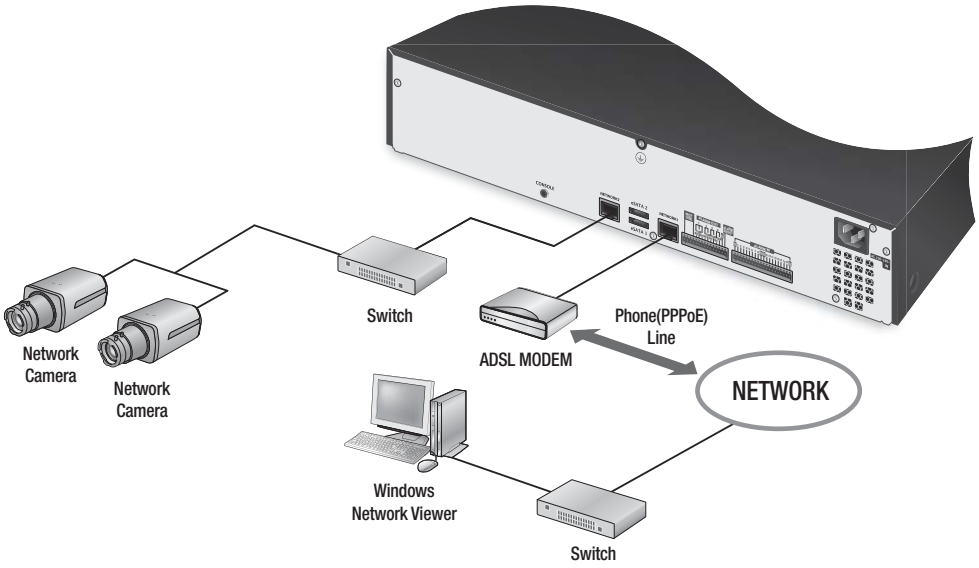
Network connection via Ethernet (10/100/1000BaseT)



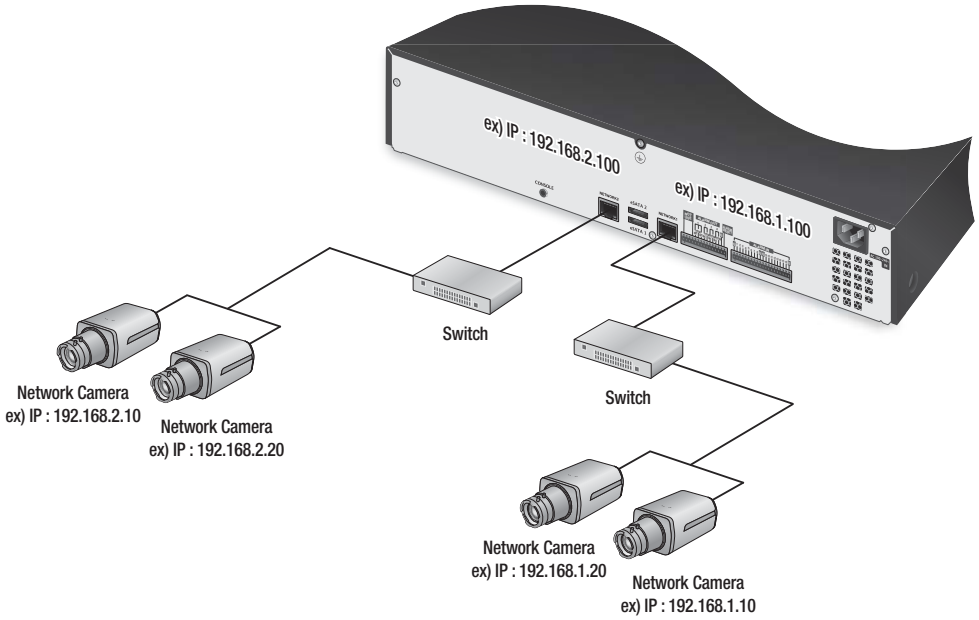
Network connection via router



Connecting to network through PPPoE



Connecting the network camera

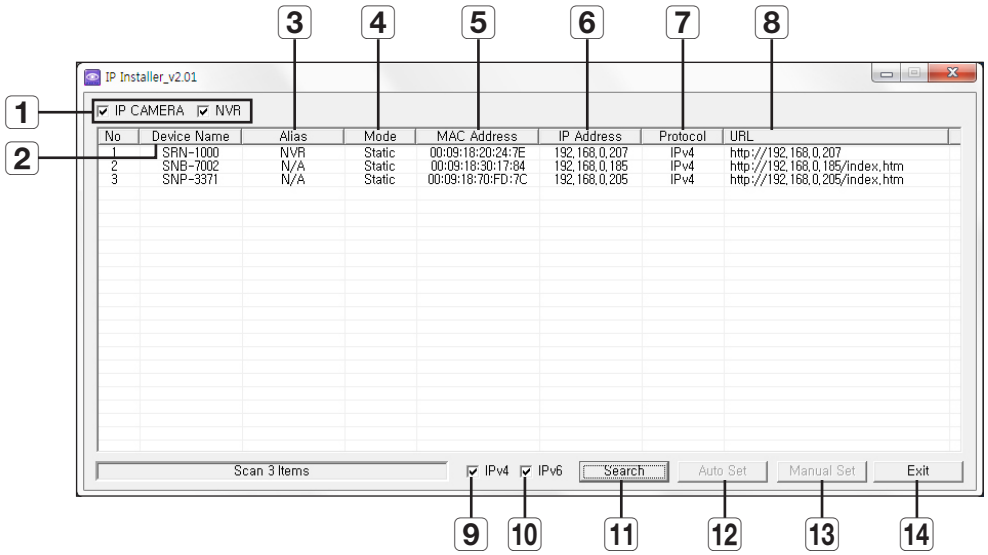


- You can connect the camera or network viewer to either [**NETWORK1**] or [**NETWORK2**] to your preference.
- Use a Giga-bit switch for network connection switch.

NETWORKING WITH IP INSTALLER

Use provided IP Installer application program to search devices on the network and manually change the network settings of the searched device.

Buttons used in IP Installer



Item		Description
1	**Device Type**	Select a device type to search.
2	**Device Name**	Model name of the connected device. Click the column to sort the list by model name. However, search will be stopped if clicked during the search.
3	**Alias**	Shows the NVR name specified by the Device Name in the <**System Manage**>.
4	**Mode**	Displays either <**Static**>, <**Dynamic**> or <**PPPoE**> for the current network connection status.
5	**MAC Address**	MAC Address for the connected device. Click the column to sort the list by MAC Address. However, search will be stopped if clicked during the search.
6	**IP Address**	IP address of selected device. Click the column to sort the list by IP address. However, search will be stopped if clicked during the search.

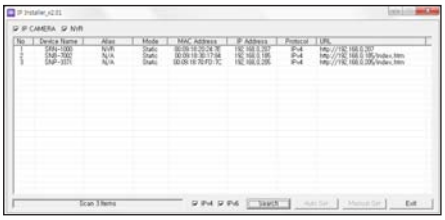
Item		Description
7	Protocol	Network setting for the device. The factory default is “IPv4”. Devices with the IPv6 setting will be displayed “IPv6”.
8	URL	DDNS URL address enabling access from the external Internet. However, this will be replaced with the <**IP Address**> of the device if DDNS registration has failed.
9	IPv4	Scans for devices with the IPv4 setting.
10	IPv6	Scans for devices with the IPv6 setting.
11	Search	Scans for devices that are currently connected to the network. However, this button will be grayed out if neither IPv4 nor IPv6 is checked.
12	Auto Set	The IP Installer automatically configures the network settings.
13	Manual Set	You should configure the network settings manually.
14	Exit	Exits the IP Installer program.

- For the IP installer, use only the installer version provided in the installation CD or use the latest one if available. You can download the latest version from the Samsung web site (www.samsungcctv.com).

Static IP Setup

Manual Network Setup

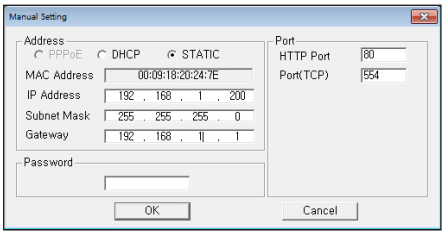
Run <**IP Installer_vX.XX.exe**> to display the device search list.
At the initial startup, both [**Auto Set**] and [**Manual Set**] will be grayed out.



1. Select a NVR in the search list.
   Both the [**Auto Set**] and [**Manual Set**] buttons will be activated.
2. Click [**Manual Set**].
   The Manual Setting dialog appears.
   The default values of <**IP Address**>, <**Subnet Mask**>, <**Gateway**>, <**HTTP Port**> and <**Port(TCP)**> of the NVR will be displayed.

- If found multiple devices assigned with the same IP address, assign different IP addresses to such devices to avoid conflict.
- If conflict has been occurred by sharing the same IP address by multiple devices, recovering may take some time.

3. In the <**Address**> pane, provide the necessary information.
   - MAC (Ethernet) Address : The MAC (Ethernet) address of the applicable NVR will be set automatically so you don't need to input it manually.



- You can configure the static IP settings only if the DHCP checkbox is unchecked.

If not using a Broadband Router

For setting <**IP Address**>, <**Subnet Mask**>, and <**Gateway**>, contact your network administrator.

4. In the <**Port**> pane, provide necessary information.

- HTTP Port : Used to access the NVR using the Internet browser, defaulted to 80. Use the spin button to change the HTTP Port value.
- Port(TCP) : Used to control the video signal transfer, defaulted to 554.

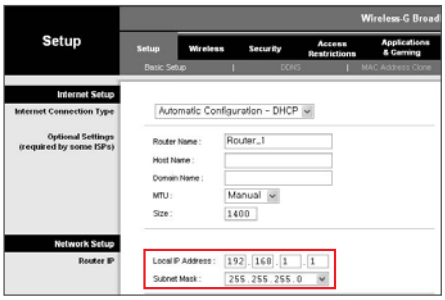
5. Enter the password.
This is the login password for the "**admin**" user who accesses the NVR.
The default password is "**4321**".

- The default password can be exposed to a hacking thread so it is recommended to change the password after installing the product.
- Note that the security and other related issues caused by the unchanged password shall be responsible for the user.

6. Click [**OK**].
Manual network setup will be completed.

If using a Broadband Router

- IP Address : Enter an address falling in the IP range provided by the Broadband Router.
  ex) 192.168.1.2~254, 192.168.0.2~254, 192.168.XXX.2~254
- Subnet Mask : The <**Subnet Mask**> of the Broadband Router will be the <**Subnet Mask**> of the NVR.
- Gateway : The <**Local IP Address**> of the Broadband Router will be the <**Gateway**> of the NVR.



- The settings may differ depending on the connected Broadband Router model.
  For more information, refer to the user manual of the applicable router.
- Refer to the "**Port Range Forward (Port Mapping) Setup**" section of the Broadband Router's documentation. (Page 24)

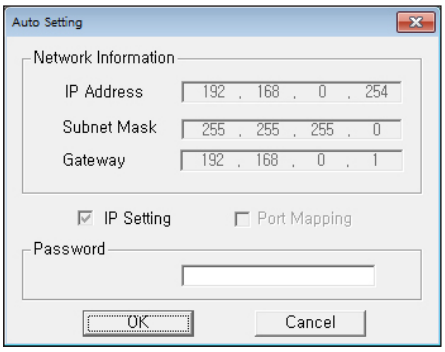
Auto Network Setup

Run <**IP Installer_vX.XX.exe**> to display the device search list.
At the initial startup, both [**Auto Set**] and [**Manual Set**] will be grayed out.

1. Select a NVR in the search list.
Both the [**Auto Set**] and [**Manual Set**] buttons will be activated.

2. Click [**Auto Set**].
The Auto Setting dialog appears.
The <**IP Address**>, <**Subnet Mask**>, and <**Gateway**> will be set automatically.

3. Enter the password.
   This is the login password for the "**admin**" user who accesses the NVR. The default password is "**4321**".



- The default password can be exposed to a hacking thread so it is recommended to change the password after installing the product.
- Note that the security and other related issues caused by the unchanged password shall be responsible for the user.

4. Click [**OK**].
   Auto network setup will be completed.

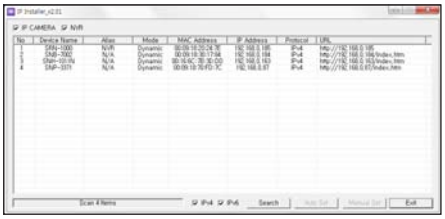
Dynamic IP Setup

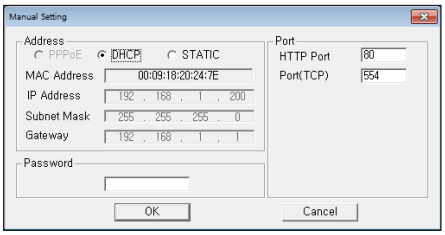
Dynamic IP Environment Setup

- Example of the Dynamic IP environment
  - If a Broadband Router, with NVRs connected, is assigned an IP address by the DHCP server
  - If connecting the NVR directly to modem using the DHCP protocols
  - If IPs are assigned by the internal DHCP server via the LAN

Checking the Dynamic IP

1. Run the IP Installer on the user's local machine to display device allocated with <**Dynamic**> IP addresses in the list.
2. Select a NVRs in the list, and click [**Manual Set**] to check the <**Dynamic**> IP of the NVR.
   If you uncheck <**DHCP**>, you can change IP to <**Static**>.





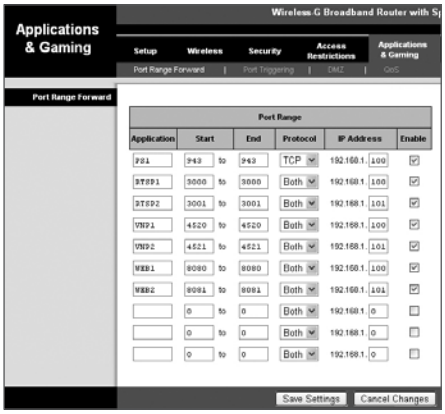
connecting with other device

PORT RANGE FORWARD (PORT MAPPING) SETUP

If you have installed a Broadband Router with a NVR connected, you must set the port range forwarding on the Broadband Router so that a remote PC can access the camera in it.

Manual Port Range Forwarding

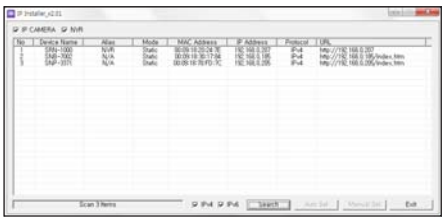
1. Broadband Router, select <**Applications & Gaming**> - <**Port Range Forward**>.
   For setting the port range forward for a third-party Broadband Router, refer to the user guide of that Broadband Router.
2. Select <**TCP**> and <**UDP Port**> for each connected NVR's to the Broadband Router.
   Each port number for the Broadband Router should match that specified in <**Network**>-<**Interface**>-<**Port**> from the NVR's Setup menu.
3. When done, click [**Save Settings**].
   Your settings will be saved.



- Above sample instructions are based on the CISCO's Broadband Router.
- The settings may differ depending on the connected Broadband Router model. For more information, refer to the user manual of the applicable router.

CONNECTING TO THE NVR FROM A SHARED LOCAL PC USING IP INSTALLER

1. Run the IP Installer.
   It will scan for connected NVRs and display them as a list.
2. Double-click a NVR to access.
   The Internet browser starts and connects to the NVR.



- Access to the NVR can also be gained by typing the NVR's IP address in the address bar of the Internet browser.

CONNECTING TO THE NVR FROM A REMOTE PC VIA THE INTERNET

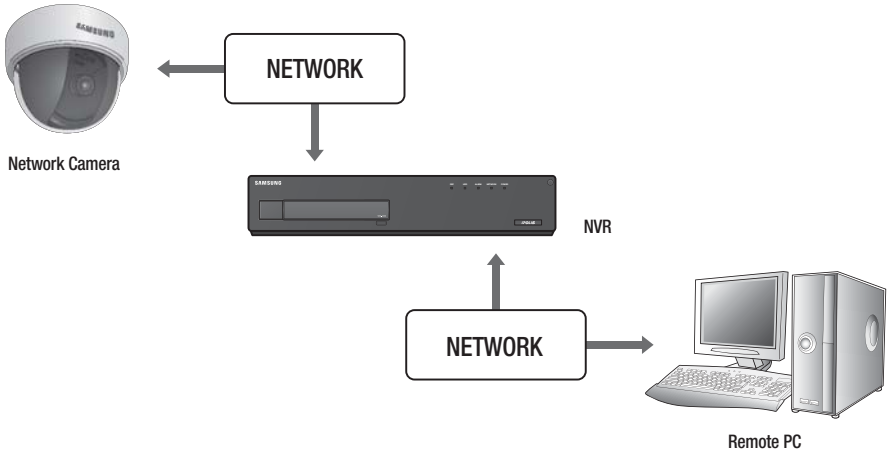
Since using the IP Installer on a remote computer that is not in the Broadband Router's network cluster is not allowed, users can access NVRs within a Broadband Router's network by using the NVR's DDNS URL.

1. Before you can access a NVR in the Broadband Router network, you should have set the port range forward for the Broadband Router.
2. From the remote PC, launch the Internet browser and type the DDNS URL address of the NVR, or the IP address of the Broadband Router in the address bar.
   ex) http://www.samsungipolis.com/[Product ID]

starting web viewer

WHAT IS WEB VIEWER?

The Web Viewer is a remote monitoring viewer that allows you to access the NVR and control real-time monitoring, PTZ control (if configured), searching, etc.



Product Features

- Remote connection using the browser
- PTZ camera control enabled
- Supports 1, 4, 9, 16 camera viewing formats (maximum of 64 cameras in the list).
- Saving function in JPEG/BMP image format for printing and storage.
- Record video in AVI format-compatible with popular media players. (The integrated codec is needed)

System Requirements

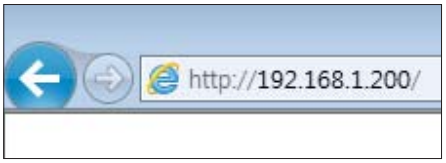
The following lists the minimum suggested hardware and operating system requirements needed to run the Web Viewer.

Item	Minimum	Recommended
CPU	Intel Core 2 Quad 2.5GHz or higher	Intel i7 or more
RAM	3GB or more	3GB or more
HDD	200GB or more	200GB or more
VGA Memory	512MB or more	1GB or more
Display Resolution	1280 x 1024 or higher	
OS	Windows XP Professional, Windows Vista Home Basic/Premium/Ultimate, Windows 7 DirectX 9.0c (Uses Direct3D Acceleration) Internet Explorer 7, 8, 9 (Internet Explorer x86 in Windows 7 64-bit environment)	
Network	10/100/1000 Ethernet NIC	

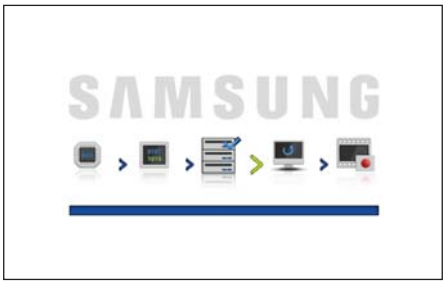
starting web viewer

STARTING THE SYSTEM

1. Connect the power cable of the NVR to the wall outlet.
2. It turns on with a beep.
3. Open the web browser and enter the NVR's IP address or URL in address field.



4. You will see the initialization screen.
   The initialization process will last about 2 minute.
   If a new HDD is installed, the initialization process may take longer.



- The LED allows you to check the system operating status at each level.
  You can recognize that the booting process is completed when the <**ALARM**> and <**REC**> LEDs turn on in order and blink together.
- The NVR runs automatically when conneced the power cable.

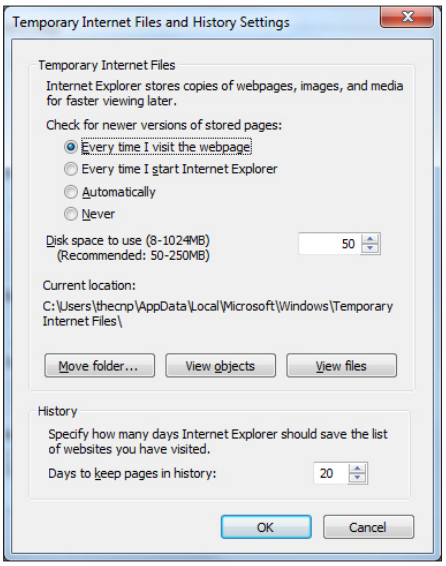
5. Once completed the booting process, the login window appears.

Setting the Internet Explorer Options

Check the following options in the Internet Explorer before starting the Web Viewer to have correct data transferred from the NVR.

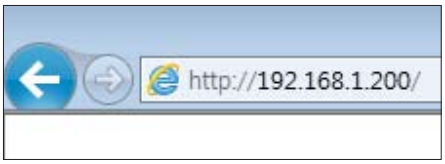
- "**Internet Options** > **General tab** > **Settings (Browsing history)** > **Temporary Internet Files** > **Check for newer versions of stored pages**:"
  You should set the above items whenever opening a page.

- For ensuring proper operation and better security of your computer's Windows / Internet Explorer, update your operating system and Internet Explorer to the latest.


Temporary Internet Files and History Settings
Temporary Internet Files
Internet Explorer stores copies of webpages, images, and media for faster viewing later.
Check for newer versions of stored pages:
Every time I visit the webpage
Every time I start Internet Explorer
Automatically
Never
Disk space to use (8-1024MB)
(Recommended: 50-250MB)
50
Current location:
C:\Users\thecnp\AppData\Local\Microsoft\Windows\Temporary Internet Files\
Move folder...
View objects
View files
History
Specify how many days Internet Explorer should save the list of websites you have visited.
Days to keep pages in history:
20
OK
Cancel

CONNECTING WEB VIEWER

1. Open your web browser and type the IP address or URL of NVR into the URL address box.



- "**192.168.1.200**" is set to IP by default.
- Set to an available IP address in IP Installer or "**Network** > **Connection Mode**".
- The URL connection will be enabled only when the DDNS connection settings have been completed.

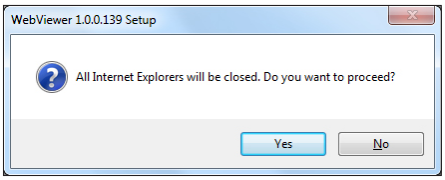
2. A user with the admin permissions should provide the admin ID and password. A registered user should provide the user ID and password.

- The default password can be exposed to a hacking thread so it is recommended to change the password after installing the product.
- Set password for your wireless network if you use the product with a wireless router. Being not protected with password or using the default wireless router password may expose your video data to potential threat.
- Note that the security and other related issues caused by the unchanged password shall be responsible for the user.

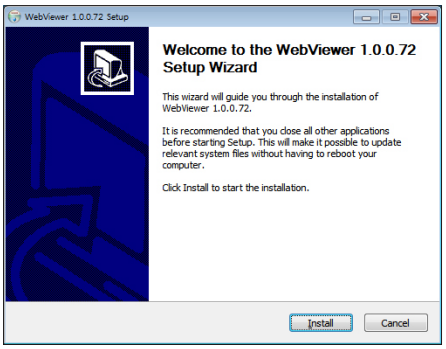
- It allow s up to 10 simultaneous access including the Admin and general users.
- It does not allow multiple login of the Admin user.
- The default ID of the admin account is "**admin**", and the default password is "**4321**".
- Password of the Admin and general users can be changed in <**Permission Management**> menu of the NVR.
- All settings are applied by the NVR's settings.

3. Click <**Install ActiveX Control...**>.

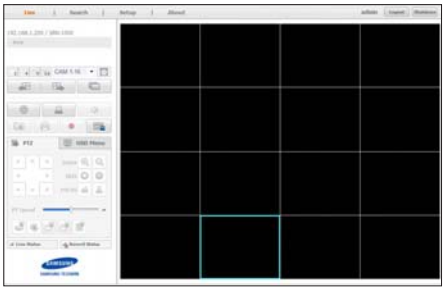
4. When the installation confirm message appear, click [**Yes**] button.



5. When a program installation wizard window appears, press the [**Install**] button to install the program.


WebViewer 1.0.0.72 Setup
Welcome to the WebViewer 1.0.0.72 Setup Wizard
This wizard will guide you through the installation of WebViewer 1.0.0.72.
It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.
Click Install to start the installation.
Install
Cancel

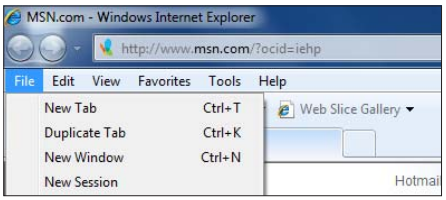
6. Open the Web Viewer after installing software, and log in again.
   Live Viewer's main screen appears when you log in successfully after installing the program.



If using more than 2 Web Viewer in the same PC

If you open a new Web Viewer while operating a Web Viewer in Internet Explorer, the user may be switched into the newly logged in user. In this case, you can open a separate window in a new session. Then, you can open a new window without applying the Session Cookie without changing the accessing account.

- Internet Explorer 7, 8, 9 : After logging in and activating the Web Viewer, if you run another Web Viewer on a new tab or on a separate explorer instance, you are requested to log in again and the account used for new instance replaces former login account for the previous Web Viewer instance.
- Internet Explorer 8, 9 : Click "**File** > **New Session**" to open a new Web Viewer window with a separate login account other than the one currently using.



▪ Terminology

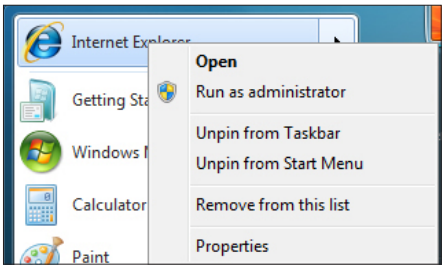
- **Cookie** : The information used from logging in a web page until closing the page.
- **Session** : The information used from logging in a web page until closing the page.
- **Session Cookie** : Usually called as session. A cookie is stored in the user's computer and maintains its information, while the session cookie is to be expired once its communication session expires In general, it is frequently used for logging in and transmitting relatively important cookie data as encrypted.

Differences on Using the Web Viewer By User Permissions

When running the Internet Explorer in Windows Vista or 7, you can run the Web Viewer with administrator permission. You have different permission range depending on which permission you use between user and administrator.

When Running the Internet Explorer as an Administrator

- You can modify file-saving path when using the Capture function in Live or Search menu. In addition, you can save the file in BMP, JPG, or PNG format.
- You can set the saving path when saving a video in AVI format.
- You can use the <**Export**> function when using "**Settings** > **Export**" function.



When Running the Internet Explorer as a User

1. If the UAC is not operating
- You cannot modify the file-saving path when using the Capture function in Live or Search menu. The file can be saved in BMP format.
- You cannot set the saving path when saving a video in AVI format.
- You can use the <**Export**> function when using "**Settings** > **Export**" function.

2. If the UAC is operating
- A warning message appears to request the user to run the Internet Explorer as an administrator when attempting to use Capture function in Live or Search menu.
- A warning message appears to ask the user to run the Internet Explorer as an administrator when attempting to save a video in AVI format.
- A warning message appears to request the user to run the Internet Explorer as an administrator when using "**Settings** > **Export**" function.

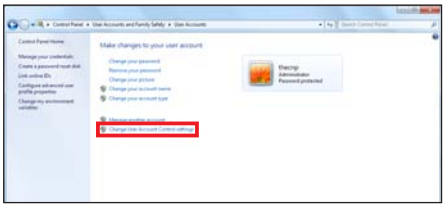
What is User Account Control (UAC)?

User Account Control (UAC) is a security technology introduced with Microsoft's Windows Vista for the first time It was also included in Windows Server 2008 and Windows 7. It aims to improve the security of operating system by limiting rights on using application software to the standard user's permission until an administrator allows required permission.

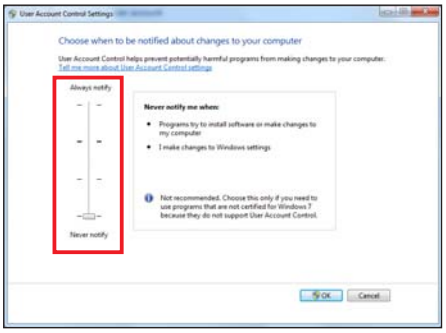
starting web viewer

To check the UAC operation

1. Select the Control Panel > User Account > Change User Account Control settings.



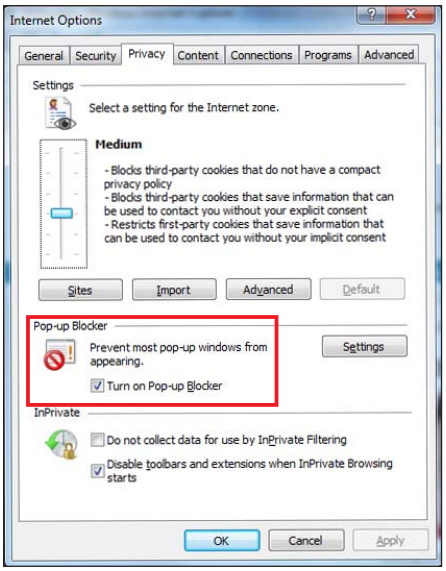
2. Set the UAC setting by adjusting the slide button in the left.


Choose when to be notified about changes to your computer
Always notify
Never notify
Never notify me when:
Programs try to install software or make changes to my computer
I make changes to Windows settings
OK
Cancel

To deactivate Pop-up Blocking

User may deactivate the Use pop-up blocker to use pop-up window which notifies corresponding status while using the Web Viewer.

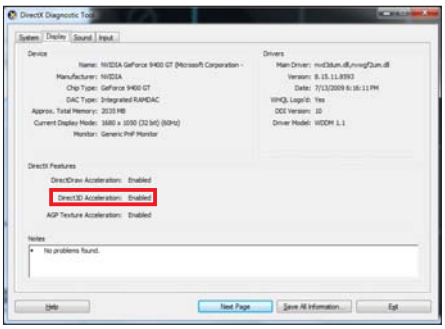
In Internet Explorer, go to the <**Privacy**> tab in <**Internet Options**>. And then deactivate the <**Turn on Pop-up Blocker**> item.



Checking Direct3D for Normal Operations of Web Viewer

Direct3D must be properly operating to view Live Viewer's video.

1. Click Windows Start button located on the left side of the screen and open the Search Programs and Files window. Enter "**DxDiag**" and press [**Enter**] key.
2. When Direct X Diagnostic Tool page starts, go to the second tab, <**Display**> tab.
   Set Direct3D Acceleration item in DirectX functions to <**Enabled**> to use the Web Viewer normally.
3. If Direct3D Acceleration item is set to <**Unavailable**>, reinstall the video card driver in your PC.



LIVE VIEWER

You can check the video from camera registered in the NVR connected from a remote PC. Also, you can adjust the camera and check the network transfer status.

Live Viewer Screen

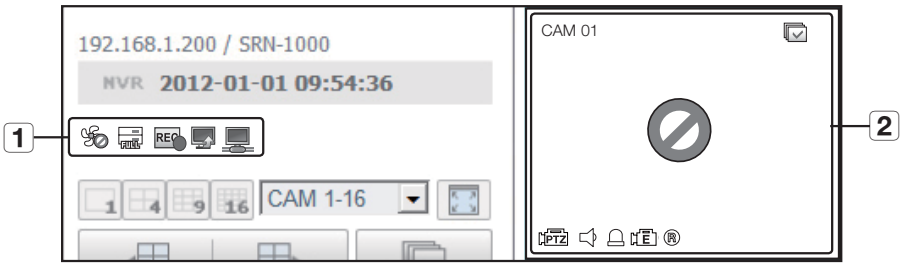
Menu		Description
1	Menu Selection	Switches into corresponding menu screen by clicking each menu.
2	Address, Name, Time	Displays the IP, model name, time, etc. of connected NVR.
3	System Stauts Indicator	Displays icons to display the screen or system status.
4	Split Mode Selection	Selects the type of split screen and specify the channel displayed in Display Pane.
5	Change Channel	Switches into previous/next channel or perform Auto Sequence. Click Auto Sequence button to display the Time Interval Selection menu.
6	Pause	Temporarily stops the videos in all the channels or deactivates the Pause function in suspending status.
	Stop Alarm	Deactivates an alarm when it occurs.
	Sound	Sets the sound connected to each channel to ON/OFF.

Menu		Description
7	Capture	Saves current video for selected channel in designated path.
	Print	Prints current video image for selected channel through designated printer.
	Save as AVI	Records the live video in AVI file format in designated path, and then stops recording. Recording status icon is displayed on screen during recording.
	Manual NVR Record	Manually activates and deactivates NVR recording.
8	PTZ	Controls connect PTZ camera(s).
	OSD menu	Goes to the relevant menu screen of a camera, which supports OSD menu and changes the menu.
9	Live Status	Displays corresponding live status of camea connected to each channel.
	Record Status	Displays corresponding record status of each channel.
10	Display Pane	Displays the video of camera connected to NVR.
11	Shutdown	Exits currently connecting NVR remotely. A confirmation pops up to check if you surely want to close the NVR.
12	Logout	Performs logout process.
13	ID	Displays the connected user ID.

LIVE SCREEN CONFIGURATION

System Status

You can check the status or operation of the NVR with the icons on the live screen.



Menu			Description	
1	System Operation		Displayed if there is a problem with the cooling fan.	
		HDD		Displayed if the HDD needs a technical examination.
				Displayed if no HDD is installed or the existing HDD should be replaced.
				Displayed if the HDD is full and the NVR has an insufficient space to record.
		Record		Appears when it is being recorded.
				This is displayed if some channels will be recorded only on key frames because the entire recording data size is over 100Mbps. (Page 70)
			Displayed if a new firmware is found from the network.	
			Appears when recording is limited due to network overload.	
2	Video Input Status		Displayed if you press the Pause button.	
			Displayed in Auto Sequence mode where all channels are switched at the specific time interval.	
			Displayed if no input is entered in the condition that the camera is set to <**ON**>.	
			Displayed if no permission to live view is granted.	
			If your camera is turned <**OFF**> or in <**Covert**> mode, nothing is displayed on screen.	

Menu			Description
2	Video Input Status	Camera Title / Channel	Display the camera title and channel number.
		PTZ	This icon is displayed for a channel that a PTZ-featuring camera is connected to.
			Displays AUDIO ON/MUTE. Not displayed in video mode if deactivated.
			If the sensor is set to <**ON**>, the input signal will be displayed on the screen of the connected channel.
		E	Set the camera event detection to <**ON**>, and a camera event will be displayed when occurred.
		Ⓡ / Ⓔ / Ⓢ	Displays the current record mode from Record/Event/Schedule.

Error Information

- If the internal HDD is not connected, the "NO HDD"( ) message will appear; if there occurs a problem, you will see the "HDD FAIL"( ) message in the top left corner. In this case, make sure you contact the service center for assistance as this may cause a failure of recording, playback or backup.
- If the cooling fan does not work properly or has a problem, the <**Fan Information**> window will appear and the fan error icon ( ) will be displayed on the top left corner. In this case, check to see if the internal fan works.
  As a fan error can shorten the product life, make sure you contact the service center for assistance.

▪ If you see the fan error icon or NO HDD, HDD FAIL icons on the screen, contact the service center for more details.

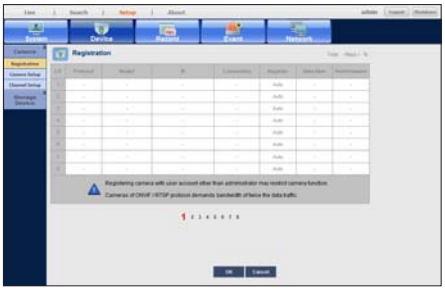
▪ If NO HDD, HDD FAIL or fan error occurs, the front LEDs (ALARM, REC) keep blinking.

Registering the Camera

You should register your camera and save corresponding settings before watching the video of registered camera in Live Viewer.

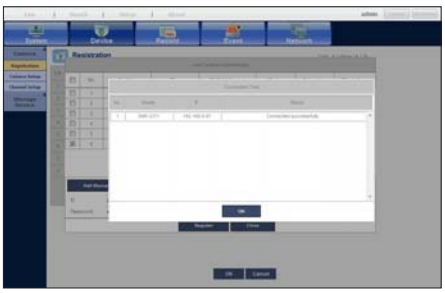
To register the camera

1. Click the <**Setup**> menu.
2. Click the <**Device**>-<**Camera**>-<**Registration**> menu.

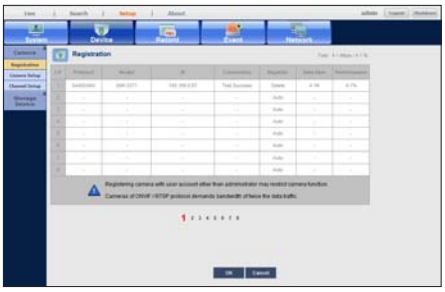


3. Click the <**Auto**> in Device Registration window.
   "**Add Camera Automatically**" window appears to list up the available cameras which are present in network.
4. Click the camera(s) to register in the list.
5. Enter relevant <**ID**> and <**Password**> for the selected camera(s).
6. Click the [**Register**] button.
   - When registering multiple cameras selected in a batch, only cameras set with the same user ID and password from the selected will be registered.

7. When "**Connection Test**" confirmation window appears, check the registration status and click [**OK**] button.
   "**Add Camera Automatically**" window is closed and registered camera(s) is(are) displayed in the list.



8. Click [**OK**] button to complete the registeration.



- For more detailed information about registering and removing camera, refer to "**To register a camera**". (Page 60)

Changing Split Mode

When clicking the Split Mode selection button, the screen is changed into the selected split mode.

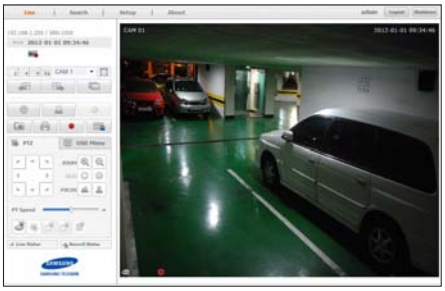
To switch to Single screen mode

Click < 1 >.

The monitor screen switches to the single screen of specified camera among displayed channels.

It is also changed into Single screen if double-clicking your desired camera channel.

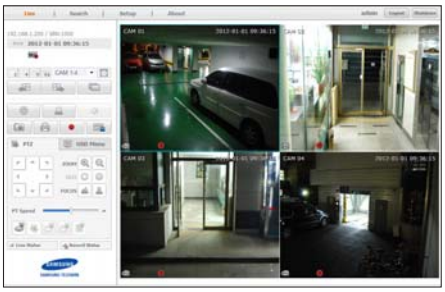
You can go to the previous/next channel by clicking the Previous/Next button.



To switch to QUAD screen mode

Click < 4 >.

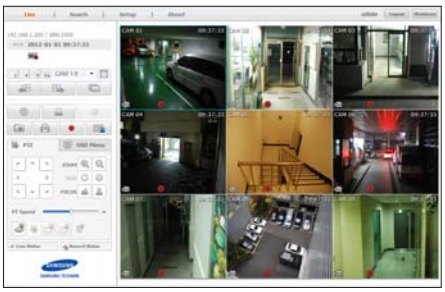
The screen mode switches to 4-split screen mode which displays the channel group including currently specified camera.



To switch to 9-split screen mode

Click < 9 >.

The screen mode switches to 9-split screen mode which displays the channel group including currently specified camera.



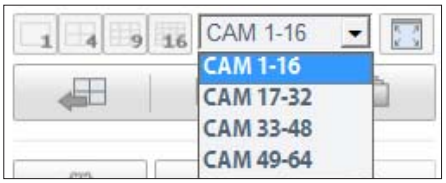
To switch to 16-split screen mode

Click < 16 >.

The screen mode switches to 16-split screen mode which displays the channel group including currently specified camera.

To go to your desired channel screen

Press the Previous/Next button to switch to the previous/next channel group. Or click the channel selection bar next to Split Mode buttons to select a desired channel in the drop-down channel list.

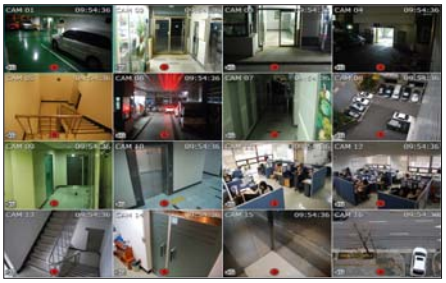


To switch to full screen mode

Click < >.

Current split screen appears in full screen.

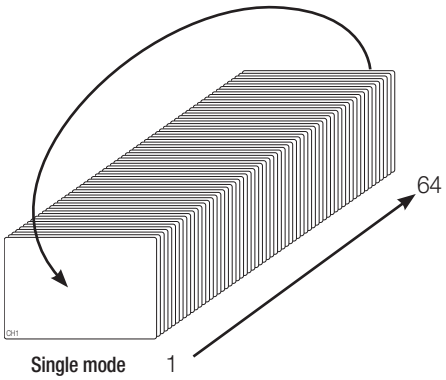
Press the [**ESC**] key to exit the full screen mode.



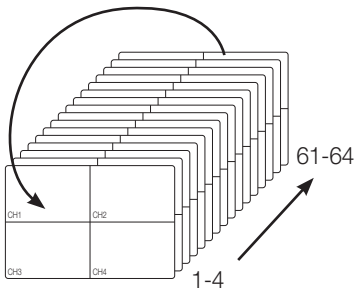
Switching the split mode

You can play 64 live videos in sequence in Single, 4-split, 9-split, or 16-split Screen mode.

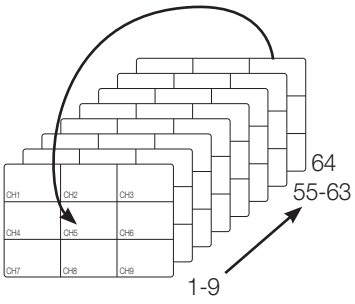
Auto Sequence



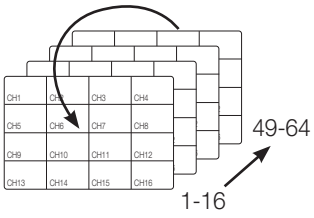
Single mode



4-split mode



9-split mode



16-split mode

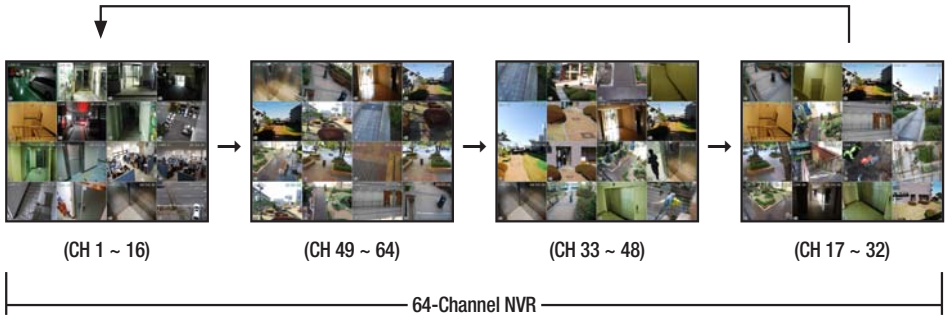
■ When switching to another channel, the video may be slightly delayed depending on network status.

To switch to previous/next channel

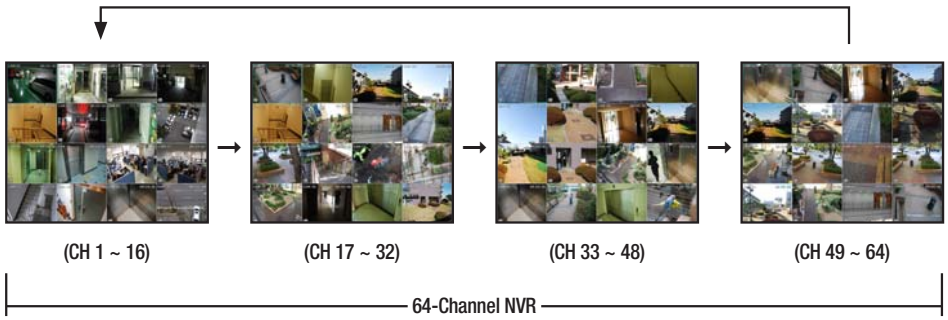
Click < > or < > button.

You can go to the previous/next screen image of connected device in current split mode.

- Previous : Switches to the previous screen in reverse order.
- Next : Switches to the next screen in order.
  If you press the < > button in 16-split mode:
  Order of reversed switching in 16-split mode : CH 1~16 ➞ CH 49~64 ➞ CH 33~48 ➞ CH 17~32 channel groups.

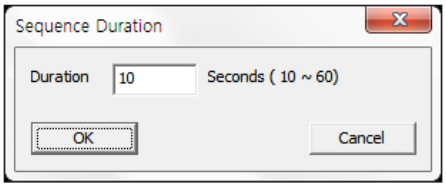


- If you press the < > button in 16-split mode:
  Order of forward switching in 16-split mode : CH 1~16 ➞ CH 17~32 ➞ CH 33~48 ➞ CH 49~64 channel groups.



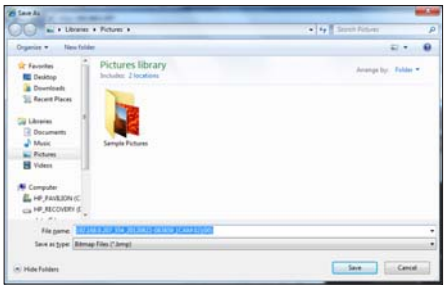
To activate Auto Sequence

1. Click [ ] button.
2. Enter the auto sequence interval.
3. Click [**OK**] button.



To capture a screen

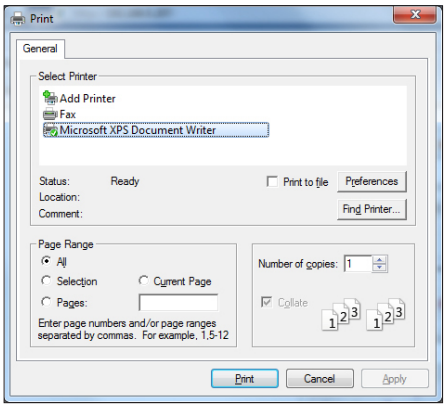
1. Click < > button.
   When a pop-up window appears, select the saving path for captured image.
2. Select the path and name the file. And then click the <**Save**> button.
3. Save current camera's video image as .bmp, .jpg or .png file.



- If the viewer is running without the administrator's permission in Windows Vista/7, you may not save the captured image as .bmp, . jpg or .png file.

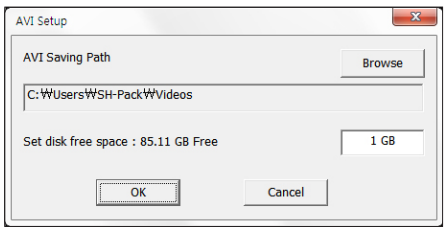
To print a screen

1. Click < > button.
2. Print current camera's video image with the printer connected to the PC operating the Web Viewer.



To save as AVI

1. Click < > button.
   When "**AVI Setup**" window appears, select the record saving path and capacity.
2. Select a desired path, enter the maximum recording capacity, and then click <**OK**>button.
   - Save current channel's video as .avi file.For playing a video clip, you can use the free video player to play the video.
     (ex: GOM Player, KM Player, etc.)



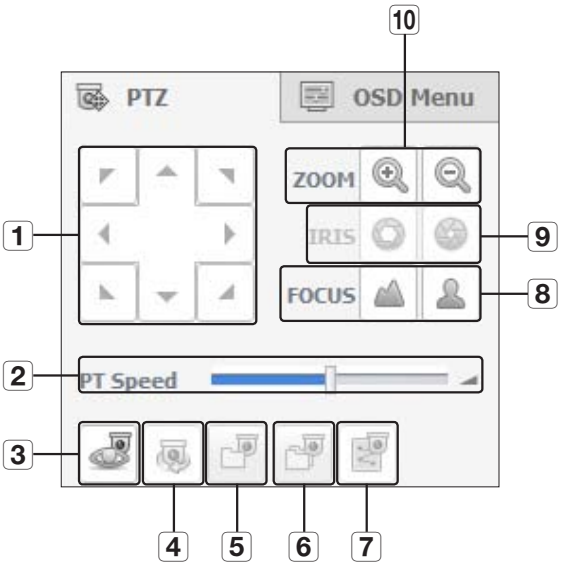
- After saving an AVI file, install the CODEC when playing it in Windows Media Player.
- However, the video may not played properly, depending on the CODEC compliance of the player.
  At least 1GB of free space is required for recording.

- While recording current data in Web Viewer, you cannot select Split Mode buttons, switch to the previous/next screen, or activate Auto Sequence function.
- If the viewer is running without the administrator's permission in Windows Vista / 7, you may not change a folder when saving a video as AVI file.

CONTROLLING A CONNECTED NETWORK CAMERA

Controlling PTZ

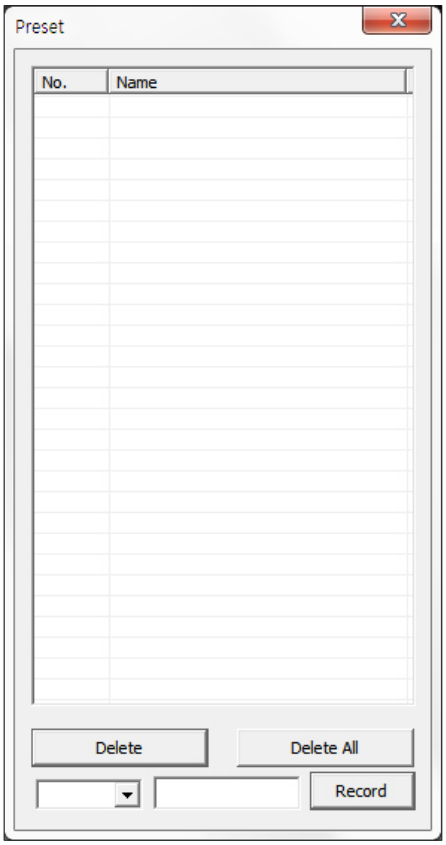
If PTZ camera is connected, the <**PTZ**> icon appears on screen. When selecting corresponding camera channel, the PTZ tab is provided to allow you to control the PTZ.



Item		Description
1	Direction Adjustment	Adjusts the direction of a camera.
2	PT Speed	Adjusts the PAN, TILT reaction speed.
3	Preset	Sets the preset position for camera framing and moves to designated preset position when selecting a desired preset.
4	Swing	Moves between the preset start point and end point.
5	Group	Moves in the path specified by combining the preset, pattern and auto pan.
6	Tour	Moves in the path specified by combining multiple groups.
7	Trace	Moves camera's framing in the predefined path.
8	FOCUS	Adjusts the focus of the camera.
9	IRIS	Adjusts image's brightness by controling the camera's iris.
10	ZOOM	Zooms in/out the image by controling camera's zoom.

To set a preset

1. Click < > button to display "**Preset**" window.
2. Click < > to select a desired preset number.
3. Enter the name of preset.
4. Use direction keys to adjust the direction which camera aims at.
5. Click the <**Record**> button.



To activate the preset

1. Click < > button to display "**Preset**" window.
2. Select a desired preset to activate from the list.
   The camera's framing moves to the preset position.

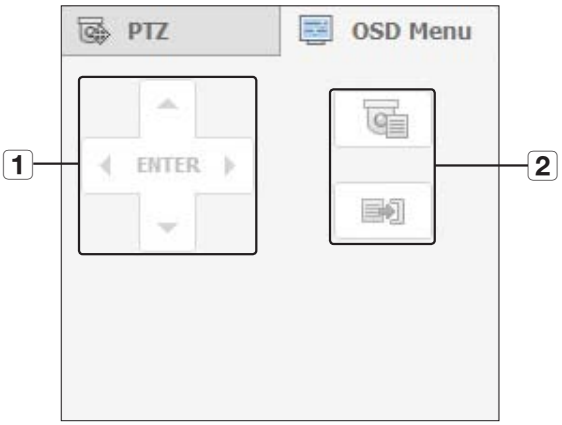
To activate Swing(Auto-pan), Group(Scan), Tour and Trace(Pattern)

You can activate listed functions in the same manner as using a preset. For more information, refer to corresponding user manul of applicable camera.

▪ Only selective functions of the camera can be supported, depending on camera.

Controlling OSD Menu

If connected network camera supports the OSD menu, press the < > to enter camera's menu screen to change its settings.



Item		Description
1	Direction Adjustment	You can go to a desired menu.
	ENTER	Selects a desired item.
2	Camera Menu / Exit	You can use / stop camera's OSD menu settings.

- For more information about camera's OSD menu, refer to corresponding user manul of each camera.

Live Status

Select <**Live Status**> from the live screen menu to display status and transfer information of connected camera to each channel.

- Connection : Checks the connection status of registered camera.
- IP : Checks camera's IP address.
- Codec : Checks camera's tansfer profile.
- Resolution : Checks camera's profile resolution.
- Send Rate : Checks camera's profile baud rate.
- Quality : Checks camera's profile transfer video quality.

Record Status

Select <**Record Status**> from the live screen menu to display camera profile, input/recording frame rates, input/limit/recording bps of each channel.

- Profile : Shows the video profile configured to each channel.
- Record Type : Displays the applied recording type.
  You can set the recording type in <**Record Setup**>.
- Frame (fps) : Show the input/record frames per second for each channel.
- Data (Mbps)
  - Limit / Input / Record : Shows the amount of limit/input/recording data for each channel.
  - Input / Limit : Shows the data ratio of actual data transferred from the camera and allowed maximum defined by user.
- Current : Shows the recording status information of currently transferred data.
- MAX : Shows recording information of the most biggest recording data out of configured standard and event recordings.
- Refresh : Reloads the recording information.
- Recordable (Date/Time) : Displays the available recording date and time calculated with the remaining free space.

SEARCH VIEWER

You can search and play the video record saved in NVR by accessing NVR remotely.

Search Viewer Screen

Item		Description
1	Menu Selection	Switches to the corresponding menu screen by clicking each menu.
2	Address, Name, Time	Displays the IP, model name, time, etc. of connected NVR.
3	Sound	Sets the sound connected to each channel to ON/OFF.
4	Split Mode Selection	Selects the type of split screen and selects the channel displayed in Display Pane.
5	Capture	Saves current video for selected channel in designated path.
	Print	Prints current video image for selected channel through designated printer.
	Save as AVI	Records and saves currently playing video image as AVI filie in designated path and then stops.
	NVR Record	Activates and deactivates an NVR recording.
6	Calendar	Displays the video-recorded date in blue and today in red. Click the date in blue color to display the recorded video information in timeline.

Item		Description
7	Overlapping Data	Displays and zooms in/out recorded video data. If overlapping data found, this function selects one of them to play.
8	Play Control	Adjusts current video's playback speed and played time position.
9	Recording Color	Displays the corresponding color depending on recorded data type if you place your mouse cursor on that area.
10	Display Pane	Plays corresponding data on the screen if you select a search result.
11	Shutdown	Terminates currently connecting NVR remotely. A confirmation pops up to check if you surely want to turn off the NVR.
12	Logout	Performs logout process.
13	ID	Displays the connected user ID.

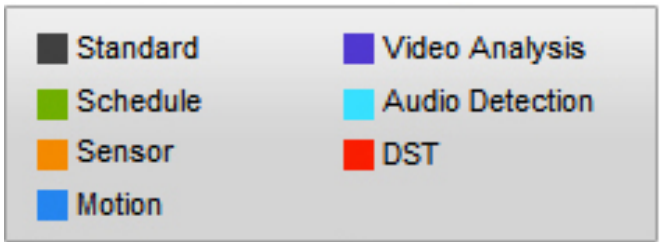
To search by date

You can select the search date by using calendar.

1. Click < « > or < » > to select the year to search.
2. Click < ‹ > or < › > to select the month to search.
   The date including data appears in blue and today appears in red.
3. Click the date to search in calendar.
   The first image of searched video data on the date is displayed on screen and the data is displayed in the timeline.
4. To search video data on today, click <**Today**>.
   Today's date is selected.

Color indications depending on current recording status

Displays the corresponding color according to the recorded data type.



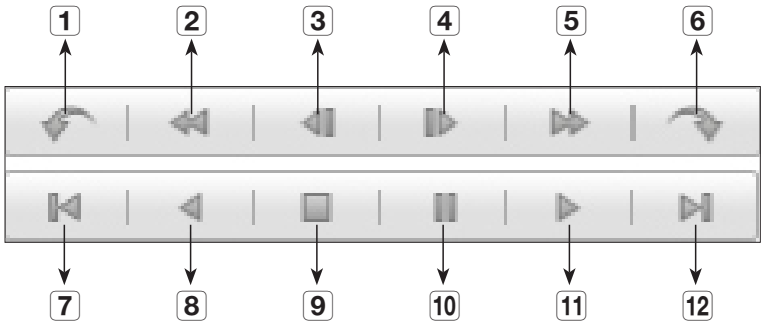
▪ If 2 or more kinds of recording type are mixed for the same timeline, only the recording type with higher priority is displayed. (Priority: Audio Detection > Video Analysis > Motion > Sensor > Schedule > Standard)

To adjust timeline

If searched data are overlapping, you can select a desired data, move its playback time point, and zoom in/out the timeline.

1. Select the number of data to search if data is overlapping.
   It appears only when data are overlapped and assigns <**0**> to the most recent data.
2. Click your desired time point to play on the timeline.
   The playback start point is moved.
3. Click <**+**> / <**-**> to zoom in/out the zoom factor to display time.
4. To show the previous/next timeline in zoomed-in status, click <◄> or <►> to go to the left or right.

Names and Functions of Play Buttons



Item		Description
1	Jump Backward 10min	Moves backward by 10 minutes from the current playing point.
2	Fast Backward	Plays in reverse at doubled speed. The playback speed is doubled up to x64 speed.
3	Step Backward	Moves backward by 1 second from current playing point.
4	Step Forward	Moves forward by 1 second from current playing point.
5	Fast Forward	Plays at doubled speed. The playback speed is doubled up to x64 speed.
6	Jump Forward 10min	Moves forward by 10 minutes from the current playing point.
7	Go to First	Moves to the recording start point on the corresponding timeline.
8	Reverse Play	Plays in reverse.

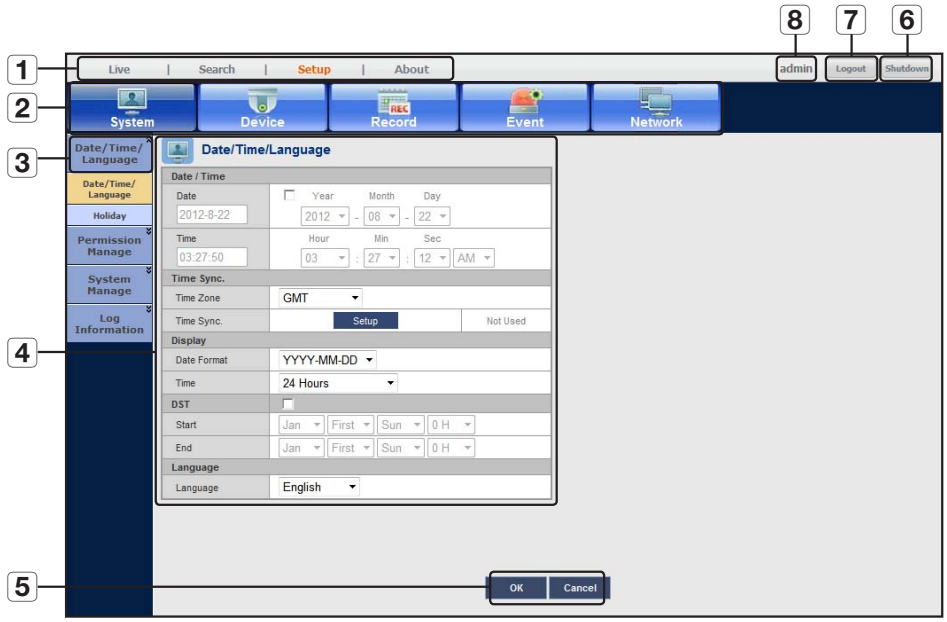
Item		Description
9	Stop	Stops playing. When resuming playback, it is played from the recording start point.
10	Pause	Pauses playing. When resuming playback, it is played from the stopped point.
11	Play	Plays normally.
12	Go to Last	Moves to the recording end point on the corresponding timeline.

menu setup

SETTINGS

You can remotely configure the NVR on network.

Settings Screen



Item		Description
1	Menu Selection	Click each menu to switch into corresponding menu screen.
2	Parent Menu	Configure the settings or select a parent item to change the existing settings.
3	Sub-Menu	Among the sub-menus of selected parent menu, select a desired item to set.
4	Detailed Menu	Click desired item's input field to change and enter a desired value.
5	OK	Apply the modified settings.
	Cancel	Return to the previous settings without saving changes.
6	Shutdown	Exit currently connecting NVR remotely. A confirmation pops up to check if you surely want to close the NVR.
7	Logout	Perform logout process.
8	ID	Display the connected user ID.

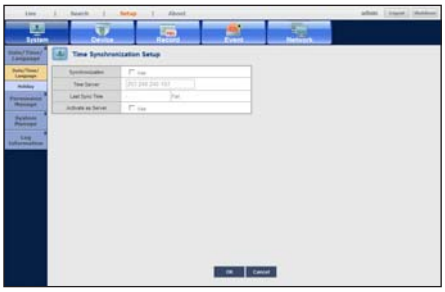
SYSTEM SETUP

You can setup Date/Time/Language, Permission, System Properties and Log.

Date/Time/Language

Setting the Date/Time/Language

You can check and setup the current Date/Time and time related properties, as well as the language used for the interface on the screen.



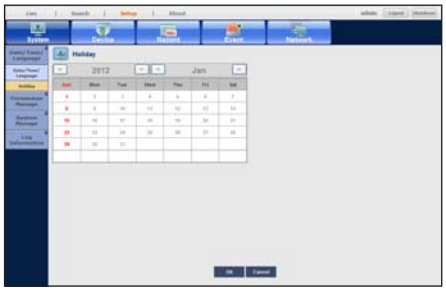
- Date: Set the date displayed on screen.
- Time : Set the time displayed on screen.
- Time Zone : Sets the time zone of your area based on the Greenwich Mean Time (GMT).
  - GMT (Greenwich Mean Time) is standard World Time and the basis of world time zone.
- Time Sync. : Specify the use of synchronization with the time server.
  Click the <**Setup**> button to display Time Sync. Setup screen.
  If you select to use the <**Time Server**>, the current time will be synchronized on a regular basis by the server defined as <**Time Server**>.
  If this is the case, you cannot change the time setting manually.
  - Synchronization : Specify the use of synchronization with the time server.
  - Time Server : Enter an IP or URL address of the time server.
  - Last Sync Time : Displays the most recent synchronization time from the selected time server.
  - Activate as Server : Set to <**Use**> to allow the NVR to act as a Time Server for other NVRs.

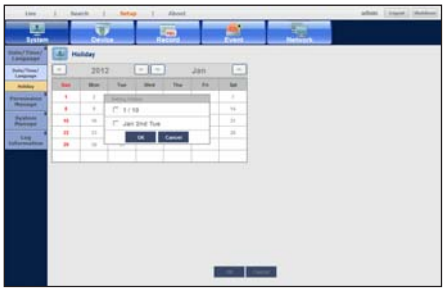
  On the right side of the Time Synchronization item, specify whether to apply time synchronization.

- Display : Select date and time display format.
- DST : Set up Daylight Saving Time with its period to make the time earlier than the GMT of its time zone by 1 hour during the set period.
- Language : Select your language. Sets the language for the interface.
  English, French, German, Spanish, Italian, Chinese, Russian, Korean, Polish, Japanese, Dutch, Portuguese, Turkish, Czech, Danish, Swedish, Thai, Romanian, Serbian, Croatian, Hungarian, Greek, Finnish and Norwegian are available.

Setting Holiday

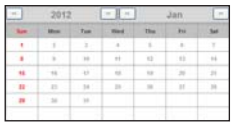
You can set specific dates to Holidays according to your preferences.
Holidays are applied to <**Recording Schedule**> and <**Alarm Out Schedule**> too.





- Ex : Select January 10th and check on <**1/10**> only to make every January 10th a holiday. Check both on <**1/10**> and <**Jan 2nd Tue**> to make every January 10th and 2nd Tuesday of January holidays.
- Date set as holiday appears in yellow color.

To select date



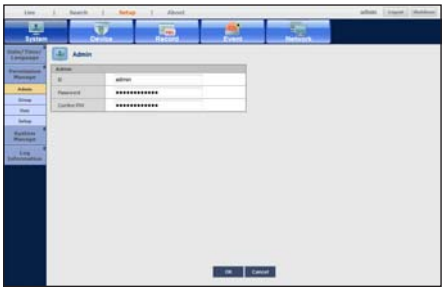
1. Click < << > or < >> > to select the year to search.
2. Click < << > or < >> > to select the month to search.

Permission Management

You can set permissions of each user over the NVR's specific function and settings.

Setting the Administrator

You can set and change Administrator's ID and password.
The administrator can use and set all menu items and functions.

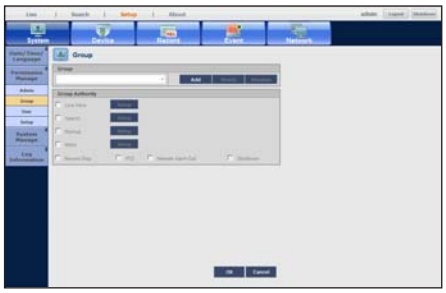


- ID : Change the admin ID.
- Password : Provide a new password.

- The default ID is "**admin**"; the default password is "**4321**".
- ID allows alphanumeric characters only.
- For the password, use alphabets and special characters excluding < \ > and <">.
- The default password can be exposed to a hacking thread so it is recommended to change the password after installing the product.
  Note that the security and other related issues caused by the unchanged password shall be responsible for the user.

Setting the Group

You can create user groups and setup permissions for those user groups.
You can register a user for each group in <**User**>.



- Add, Delete, Rename : You can add, delete, rename a group or modify the permissions given to the group.
  The virtual keyboard appears when <**Add**> or <**Rename**> was selected.
  You can add up to 10 groups.
  - Add : Provide a name for the group that you want to add. You can add up to 10 groups.
    When you first start the NVR, the admin is the only user account so any other button than Add will be deactivated.
  - Delete : Deletes a user group that is already registered. Selecting Delete will delete all user accounts belonging to that group.
  - Rename : Renames a group that is already registered. Select <**Rename**> to display the virtual keyboard.
- Group Authority : Sets permissions to access menu items of each group.
  Users of a group can access checked functions.

To set the group authority

You can set the permissions of the group users to access the menu according to the channel.

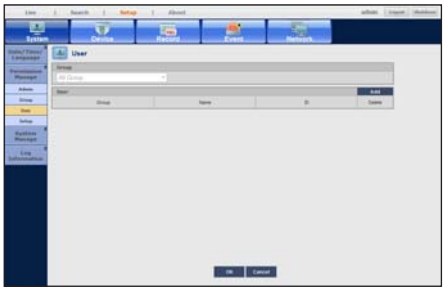
1. Select a menu to which the group permission is assigned.
The menu where the group permission is assigned will be displayed in the Live menu when a group user logs in.

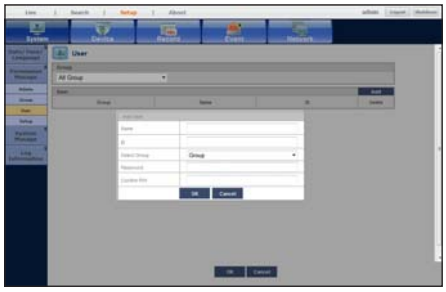
- Live View : You can set the permission to access the Live screen according to the channel.
Select the check box to pop up the "**Channel Setup**" window. Click desired channel's check box to display Live View.
- Search : You can set the permission to access the Search menu according to the channel.
Select the check box to pop up the "**Channel Setup**" window. Click desired channel's check box which is available to search.
- Backup : You can set the permission to access the Backup menu according to the channel.
Select the check box to pop up the "**Channel Setup**" window. Click desired channel's check box to back up.
Note that the Web Viewer itself does not provide its own backup function.
- Menu : You can set menus accessible with a specific permission. Group users can access the permitted menus only. Select a menu to display the Menu Permission screen.
- Record Stop, PTZ, Remote Alarm Out, Shutdown : Select an item so that the item will be added to the permissions.

2. Click <**OK**>.
Select and assign a group user so that the user can access the specified menu.

Setting the users

You can add a user and edit information of a registered user.

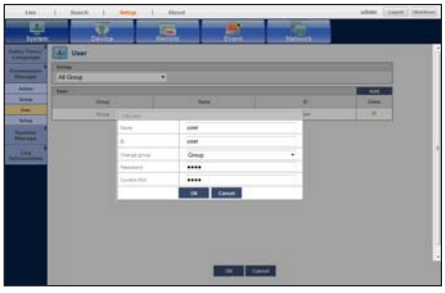


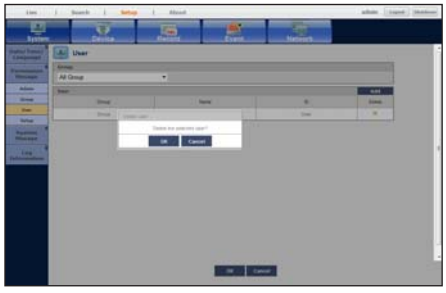


To register a user

1. Select a user group.
   You must first register a group where the user will belong to so that user can be registered. (Page 53)
2. Enter name, ID, and password.
3. Click <**OK**>.
   Registered user information is displayed in the list.

To edit or delete user information

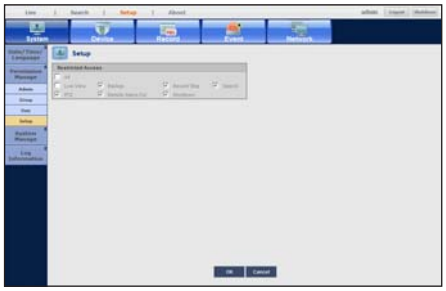




1. Select an item in the user information displayed in the list.
2. Edit desired information(s) and click <**OK**>.
3. To delete the user information, click the Delete button displayed in the list.
4. When confirmation prompts, click <**OK**>.

Setting Permissions

You can set restricted access for all general users.
Items with restrictions will require logging in for use.



- Restricted Access : All menu items allowed for a user can be set with restricted access.
  - Checked (☑) : Restricted
  - Not checked (☐) : Accessible
  - If it is not checked (☐) in <**Restricted Access**>, any user can access the item no matter what the <**Group Authority**> setting.
  - If it is checked (☑) in <**Restricted Access**>, a user can access the item only if the user has permission in <**Group Authority**> setting.

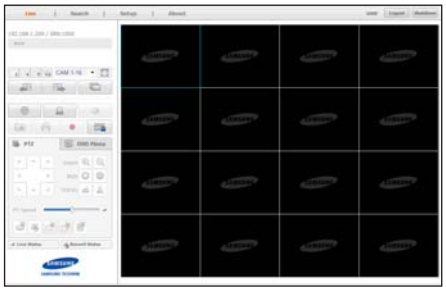
If the user has restricted access

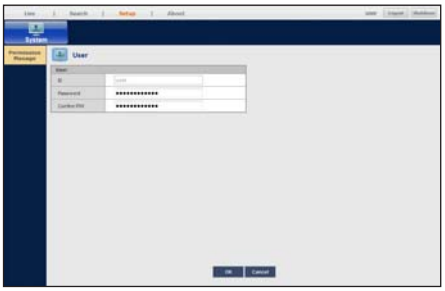
If a new group is restricted to access the entire menus, the users belonging to the group can access only the basic menus and can change only their respective password.

If all permissions are restricted, you can only access to the menu buttons which are accessable on Live Viewer screen.

To change password of a regular user with restricted permission

If you log in with the user account of a group with restricted access, you just can change your own password.





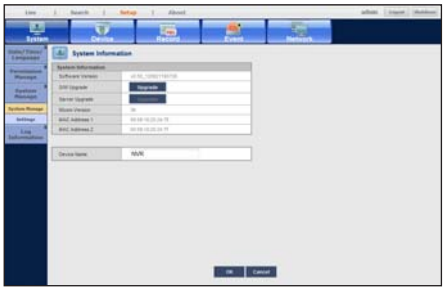
1. Provide the login information.
2. Click <**Setup**>.
   The Permission Management screen appears.
3. Provide a new password.
4. Click <**OK**>.
   The old password will be changed to a new one.

System Manage

You can confirm the version of the current system, update its version to recent one, or initialize the settings.

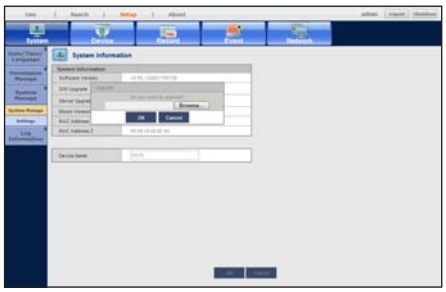
Checking the System Information

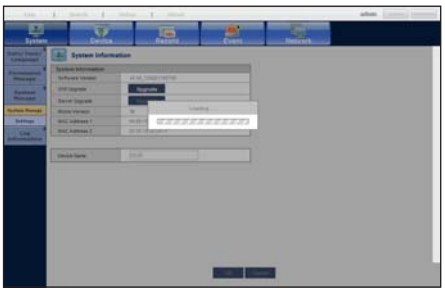
You can check the current software version and MAC address before proceeding with the upgrade.
It is not allowed to edit each setting value.



- Software Version : Shows the current Software Version information.
  The values can not be changed by a user.
- S/W Upgrade : Updates the NVR's software up to date.
- Server Upgrade : If upgradable file(s) is(are) available from the server, corresponding software is upgraded to the most updated version.
- Micom Version : Displays the internal Micon version.
- Mac Address 1/ 2 : Displays the system Mac address.
- Device Name : Displayed if the network viewer is connected to NVR.

To upgrade the current software version



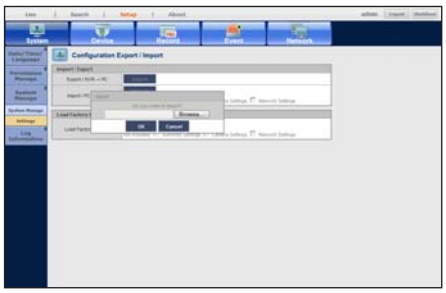


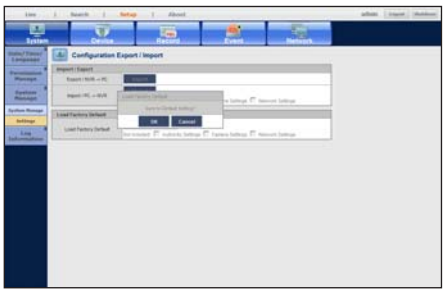
1. Prepare the software to upgrade.
   - In case of server upgrade, NVR must be currently connected to the server in the network.
     When a new firmware is available in the network, the corresponding icon appears to notify the update. (Page 34)
   - If connected through a proxy server, it may not be upgradable due to limited access.
2. Select the <**System Manage**> in <**System**> window.
3. Select the <**Upgrade**>.
4. Select the prepared software and press OK.
   - You can execute <**Upgrade**> function only when the <**Version**> of <**S/W Upgrade**> is higher than the <**Software Version**> of <**System Information**>.
5. The screen changes according to each phase of upgrade.
6. The system restarts automatically after completing the upgrade.
   Do not turn off the system power or disconnect the network until it is fully rebooted.

- Try again from step 3 when "**Fail**" window prompts.
  Contact your service center if you fail continuously.

Settings

You can copy and import the NVR settings by using a storage media.





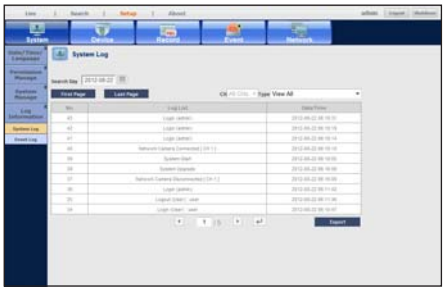
- Export : Exports NVR settings to the connected storage device.
- Import : Imports NVR settings from the storage device and applies to the NVR.
  - Check checkboxes of items to be excluded from importing.
    Only the other items than selected will be applied to the NVR.
- Load Factory Default : Restore the factory default settings of NVR.
  Check the checkbox of an item(s) that you want to reset. Then, only the other items than the selected one will return to the factory default.
  If <**Default**> is selected, a confirmation dialog for "**Load Factory Default**" prompts.
  Press <**OK**> to initialize the system to the factory default.

Log Information

You can browse logs on the system and events.

Checking the system log

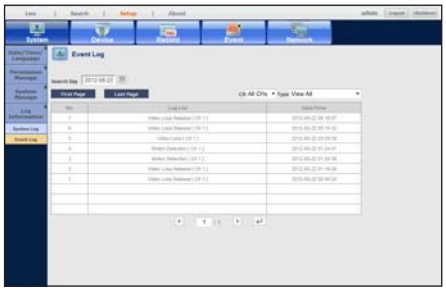
System Log shows log and timestamp on every system start up, system shutdown, and changes on system settings.



- Search Day : Click the Calendar button to select a desired search day.
- First Page : Goes to the first page of searched list.
- Last Page : Goes to the last page of searched list.
- CH : Select <**All CHs**> to scan all the channels. Or select a desired channel to scan a specific channel.
- Type : If there are a lot of log data, you can select desired log type to search for required contents easily.
- Export : You can export the log information in text file format.
- [↵] : Enter your desired page number and press the < [↵] > button to go to corresponding page.

Checking the event log

You can search recorded events including alarms, camera events and video loss.
It also shows the log and its timestamp.



- Search Day : Click the Calendar button to select a desired search day.
- First Page : Goes to the first page of searched list.
- Last Page : Goes to the last page of searched list.
- CH : Select <**All CHs**> to scan all the channels. Or select a desired channel to scan a specific channel.
- Type : If there are a lot of log data, you can select desired log type to search for required contents easily.
- ↵ : Enter your desired page number and press the < ↵ > button to go to corresponding page.

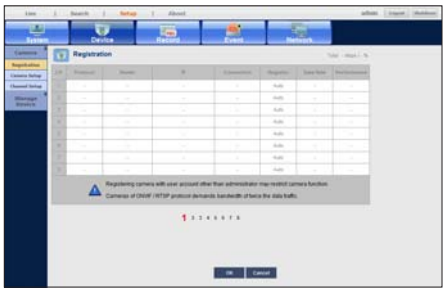
SETTING THE DEVICE

You can save relevant information in a camera or storage device.

Camera

To register a camera

You can register a network camera for each channel and make connection between.

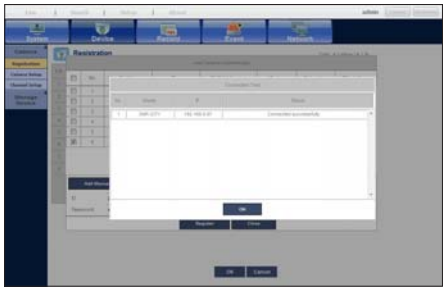


- Protocol : Show the protocol information of a registered network camera.
- Model : Show the camera model name.
- IP : Display the IP address of a network camera.

- Connection : Display the connection status.
- Register : This is the default registration button for a network camera.
  It will be displayed <**Auto**> before registration, and will be changed to <**Delete**> after registration.
- Data rate : Displays the total amount of data received from the channel.
- Performance : Displays the occupancy out of configured communication bandwidth for receiving the corresponding data traffic.
  Note that the cameras of RTSP and ONVIF protocols require about 2 times of data traffic to support control traffic.

▪ If NVR is set to the defaul values, camera(s) may not be connected. So, set the network environment before registeration. For more information, refer to "**Network Configuration**". (Page 76)

To auto-search for and register a network camera

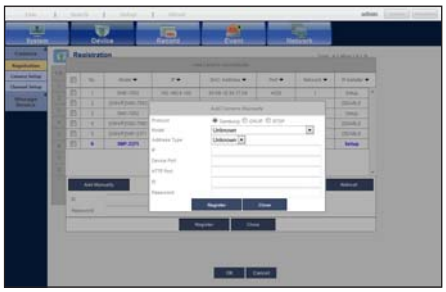


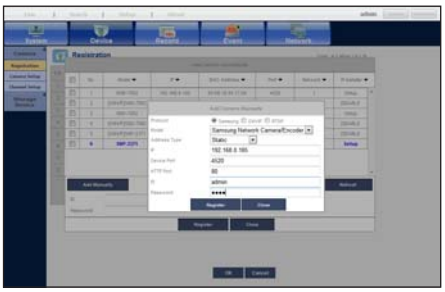
1. Click the <**Setup**> menu.
2. Click the <**Device**>-<**Camera**>-<**Registration**> menu.
3. Click the <**Auto**> in Device Registration window.
   "**Add Camera Automatically**" window appears to list up the available cameras present in the network.
   ▪ Press the <**Refresh**> button to check the changes of networked camera(s).
4. Click the camera(s) to select from the list.
5. Enter relevant <**ID**> and <**Password**> for the selected camera(s).
6. Click the [**Register**] button.
   ▪ When registering multiple cameras selected in a batch, only cameras set with the same user ID and password from the selected will be registered.
7. When "**Connection Test**" confirmation window appears, check the registration status and click [**OK**] button.
   "**Add Camera Automatically**" window is closed and registered camera(s) is(are) displayed in the list.
8. Click [**OK**] button to complete the registeration.
   ▪ If <**Performance**> exceeds 100% of the system capacity, you cannot register a camera further.

▪ Since megapixel camera provides big sized video data, you should configure the number of concurrent monitoring accesses and video settings appropriately considering your PC performance.
The followings are the recommended PC requirements for Web Viewer, which can be a configuration guide for H.264 video monitoring.

- If monitoring 16 channels simultaneously with megapixel cameras whose resolution is set to 1280x1024 and size is set to 5120Kbps (CBR), it is recommended to limit the maximum frame rate of each camera to 10fps.
- If monitoring 16 channels of megapixel cameras (at 1280x1024 and 2560Kbps(CBR)) and another 16 channels of 4CIF cameras simultaneously, it is recommended to limit the maximum frame rate of each camera to 5fps.

To manually search for and register a network camera





1. Press <**Add Manually**> in the bottom left corner of the "**Add Camera Automatically**" window.
2. The Manual Search window appears.
3. Select a protocol.
   The input items may differ depending on the selected protocol.

- Samsung : Comply with the internal network protocols adopted by Samsung Techwin.
- ONVIF : Means the camera supports ONVIF protocols. When connecting a camera that its name cannot be found from the list, select <**ONVIF**>.

▪ Time difference between the ONVIF camera and NVR exceeds more than 2 minutes, the camera cannot be connected. In this case, synchronize the ONVIF camera's time to the NVR or set times of both camera and NVR to a same NTP server (if in the same time zone), or make the NVR an NTP server.

- RTSP : Comply with RFC 2326, one of "Real Time Streaming Protocol (RTSP)" for real-time streaming.

4. If you select the <**Samsung**> protocol, check options as necessary.

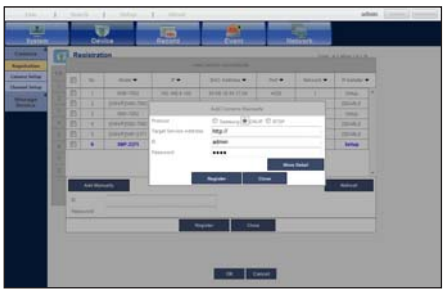
- Model : Select a camera model.
  - Samsung Network Camera/Encoder : Means the camera/encoder supports Samsung Techwin's SVNP protocol. When connecting a camera that does not appear in the camera list, select Samsung Netowrk Camera/Encoder.
    ▪ However, you must select the correct model name of the camera, if it's in the list. Some of obsolete camera models may not be supported.

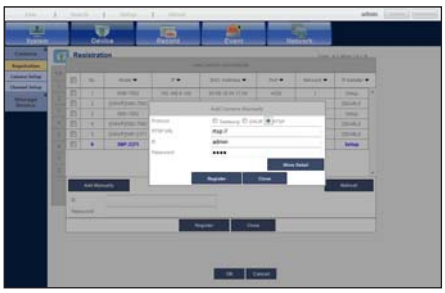
- Address type : Select an address type of the camera.
  ▪ Address type can be different dependingon connected product model.
  - Static : Used to provide the IP address of the camera manually.
  - iPOLiS DDNS : This is available only if the camera is registered with the iPOLiS DDNS(www.samsungipolis.com) server. Provide the registered domain for DDNS ID.
    ▪ Ex) http://www.samsungipolis.com/snb5000 -> provide "snb5000" for iPOLiS DDNS
  - MAC (Samsung) : Available if the camera supports the MAC Address-based DDNS.
  - URL : Used for URL address input.

▪ Refer to the user manual of the connected camera and check the DDNS specification that is supported by the camera.

- IP : Provide the IP address of the camera.
- Device Port : Provide the device port of the camera.
- HTTP Port : Provide the HTTP port of the camera.
- ID : Provide the ID of the camera that you want to register.
- Password : Enter the password of the camera to be registered.

5. Select <**ONVIF**> or <**RTSP**> for the protocol and enter your input for each field appears.





- Target Service Address / RTSP URL : Enter the camera's RTSP access address that supports ONVIF or RTSP. For more information about the RTSP address, refer to the manual of each applicable network camera.
- ID : Enter the ID for accessing via ONVIF/RTSP protocol.
- Password : Enter the password for accessing via ONVIF/RTSP protocol.
- Mode : Select a mode that is supported by the network camera in RTSP connection mode.
  - TCP : The connection type with the network camera will switch to "RTP over TCP".
  - UDP : The connection type with the network camera will switch to "RTP over UDP".
  - HTTP : The connection type with the network camera will switch to "RTP over TCP (HTTP)".

6. Click the <**Register**> button to register the selected camera.

If you want to check the error details of camera registration

If you failed to register a camera, the reason for the failure will be displayed.

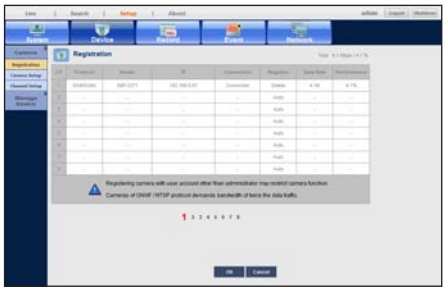
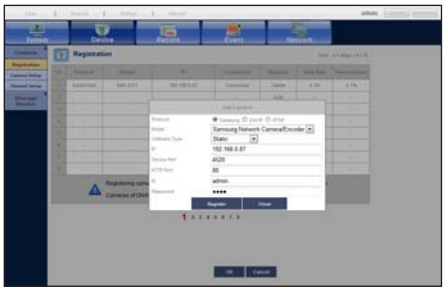
- **Connection failed due to unknown error.** : This message appears if the camera has failed to be registered due to unknown connection status.
- **Connected successfully.** : This message appears if the camera is connected successfully.
- **Incorrect model information. Provide the correct model information.** : This message appears if the model information provided for registering the camera is incorrect.
- **Authentication has failed** : This message appears if the ID or password provided for registering the camera is incorrect.
- **Connection has failed due to excessive concurrent users.** : This message appears if the concurrent user count exceeds the upper limit.
- **Connection has failed due to incorrect HTTP port information.** : This message appears if the HTTP port number of the camera is invalid.
- **Connection has failed. Unknown connection status.** : This message appears if the camera has failed to be connected due to a unknown error.
- **User Model Modification** : When registering a new camera, it is named according to the device's default if user set the model to <**Samsung Network Camera/Encoder**>. In case if automatic registration fails, user can change the model name of camera to be registered.

To edit camera profile

When a camera is added for the first time, it is added as the default profile of H.264, MPEG4 and MJPEG in order temporarily.
To change its profile, refer to "**Setting the network camera's recording profile**" (Page 71) or "**Live Streaming**" (Page 83).

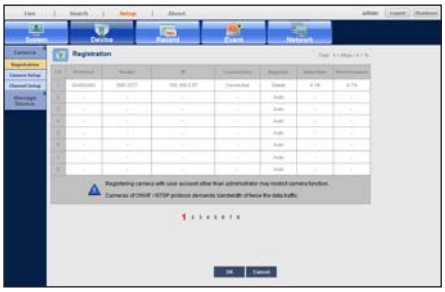
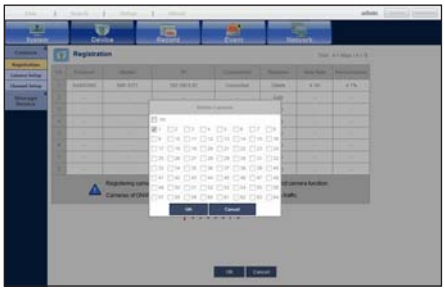
- In case of NVR, if you set 2 different profiles for live, recording and network profile, one camera will produce video streams accordingly, having different stream formats. Especially, note that the live profile may vary depending on the used screen split mode.
- For cameras, if applied with one profile only, the produced frame rate is fixed as the profile specifies; if applied with multiple profiles, produced video stream's frame rate is not guaranteed. For example, if applied with 2 profiles of 30 fps, the camera may transmit streams at 20fps.

To edit a registered camera

1. Click a camera to edit in the camera list.
2. Select the item to modify in "**Edit Camera**" window and modify its information.
3. When completed, click <**Register**> button.

To delete a registered camera

1. Select the camera to delete in the camera list and click <**Delete**>.
2. Click desired camera's check box in "**Delete Camera**" window.
   Click <**All**> to delete all the cameras.
3. Click <**OK**> when selecting all desired camera(s).

Camera Setting

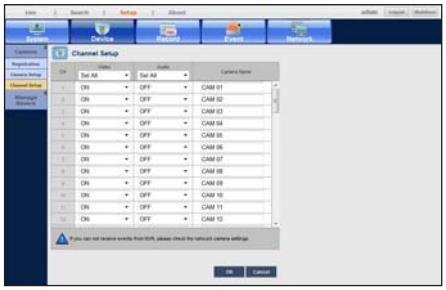
You can change the video settings of a registered network camera for each channel.

- Select Camera : Select the camera number to change its settings.
- Profile : Displays video profile for connected camera settings.
- Codec : You cannot change the CODEC for selected profile.
- Resolution : You can change the resolution for selected profile.
- Send Rate : You can change the baud rate for selected profile.
- Quality : You can change the video quality for selected profile.
- Bitrate Control : You can change the bitrate setting of video transfer for the selected profile.
- Add : Add a camera profile.Click Add button to display the Add window.
  Provide information and click <**OK**> button to add it to the list.
- Modify : Change the selected profile.
  Select a profile and click <**OK**> button to display the Modify screen.
- Delete : Delete the selected profile from the list.

- If you change the settings of a specific profile for each model, the effective range of the baud rate may be changed accordingly.
  Ex) if you set the baud rate of the first profile to 30fps, the send rate of the second profile will be changed to 15fps.
- Menu items except Codec, Resolution, Transfer Rate, and Transfer Quality can be configured in the network camera's settings menu.
- If you change the current profile settings, you may encounter an interrupted playback on the recording or live screen for a certain time.
- Changes made in Camera Setup page are applied immediately, while changes made through the camera's web page may require up to 3 minutes.

Channel Setting

You can configure the video settings for each channel.



- Video
  - <**ON/OFF**> : You can turn ON/OFF the selected channel's camera.
  - <**Covert**> : Shows nothing but an empty screen while the recording continues.

▪ The channel whose video is set to <**Covert**> does not produce any sound.
However, the channel's sound is recorded if its Audio setting is set to <**ON**>, even the sound is not heard in Live mode.

- Audio
  - If set to <**ON**>, you can turn the audio of the channel ON/OFF on the Live screen.
  - If set to <**OFF**>, the channel's audio is off on the Live screen and not recorded.
- Camera Name : Provide a camera Name.
  - ▪ You can enter up to 15 characters including space.

Storage Device

You can check information on storage devices.

Confirming Devices

You can check storage devices and their free space, usage as well as status.
You can connect HDD.

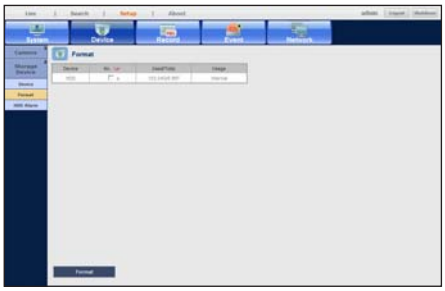
- No. : Shows the assigned number of the internal HDD.
  - To see the detailed positioning of the HDD according to the number, refer to <**HDD Map**>.
- Used/Total : Shows the used/total capacity of the storage device.
- Usage : Sets the storage device's usage.
  - You can select the eSATA HDD for extended storage

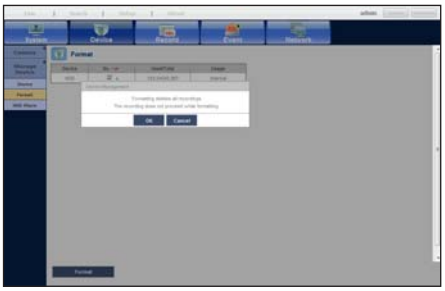
- If disconnected an extended eSATA HDD storage device while operating, the system may restart.

- Status/Management : Display the status of the storage device.
- Temperature : You can check the temperature of HDD installed in NVR.
- HDD Map : Shows the internal HDD's locations according to assigned numbers.
  - Refer to this for servicing or additional HDD installation.

Formatting

You can format a storage device.



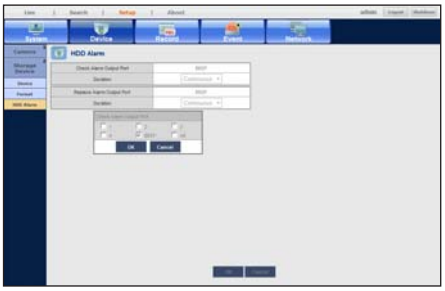


- No. : Select the check box of the device to format.
- Used/Total : Shows the used/total capacity of the storage device.
- Usage : Sets the storage device's usage.
- Format : Select a device and press this to display the format confirmation dialog. Press <**OK**> to start formatting the selected storage device.

- Note that formatting the device will delete all of the existing recording data.
- Note that no recording is made during formatting is in progress.
- Do never remove the device to format until formatting is completed.

HDD Alarm Setting

You can set alarm settings for HDD defects such as Check Alarm Output Port, Replace Alarm Output Port, and its duration.



- Check Alarm Output Port : If HDD generates check alarm, the alarm signal will output to the specified alarm output port.
- Replace Alarm Output Port : If HDD generates replace alarm, the alarm signal will output to the specified alarm output port.
- Duration : Sets the alarm duration for the alarm signal and beep sound.
  - Check Alarm, Replace Alarm signals will output through the selected alarm out ports (1, 2, 3, and 4).
  - If <**BEEP**> was selected, a beep will sound.
  - If <**All**> was selected, both beep sound and alarm signal through rear side ports will output.

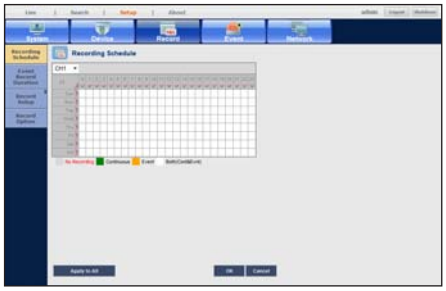
- <**Check**> status means that the HDD is operating but it has problems that require technical examination. ( ) appears on the Live screen.
- <**Replace**> status means that the HDD has defect and requires immediate replacement. ( ) appears on the Live screen.

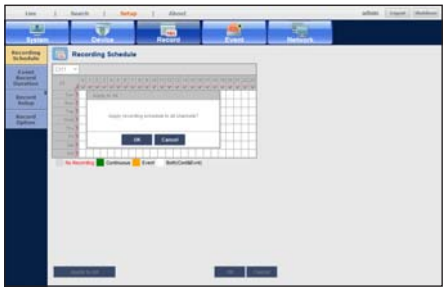
SETTING THE RECORDING

You can setup scheduled recording, event recording and other recording related settings.

Recording Schedule

Make your reservation on a date and time to schedule the recording on specified time.





- CH : Select the channel to configure scheduled recording.
- All : The entire time range (Monday through Sunday including holidays, AM 0~ PM 23) will be reserved with the same recording schedule
- Apply to All : If selected <**Apply to All**>, "**Apply to All**" window appears.
  Press <**OK**> to apply the setup to all channels.

▪ Event recording and scheduled recording starts about 3 seconds prior to the event/schedule for guaranteed recording.

Record setting by the color

Color	Function	Description
No Color	No Recording	No schedule / event recording
Green	Continuous	Scheduled recording only
Orange	Event	Event recording only
White	Both(Cont&Evnt)	Both scheduled / event recordings

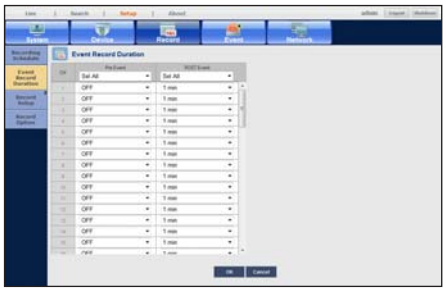
Each press of a selected cell will cycle through <**No Recording**>-<**Continuous**>-<**Event**>-<**Both(Cont&Evnt)**>.

To set the recording schedule

1. Click desired recording type to schedule from listed under the time setting cells.
   The color of selected type changes into red.
2. Click the cell or drag desired area to schedule.
3. Click <**OK**> button to complete and apply the schedule.

Event Record Duration

You can set the beginning and ending point of a recording on an event.



- Pre Event : The recording of an event will start at a pre-determined time prior to the actual occurrence of the event. If it is set to 5 seconds, the recording begins from 5 seconds before the event.
- POST Event : The recording will continue for a pre-determined time after the actual end of an event. If it is set to 5 seconds, the recording ends in 5 seconds after an event.

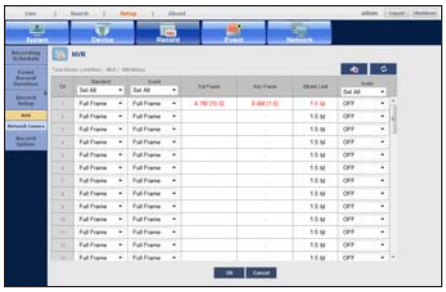
■ If the video resolution is larger than 4CIF, recording may not proceed as much as the pre-event recording time. The greater the video data size is, the maximum pre-event recording time will be reduced in inverse proportion.

Record Setting

You can set resolution, IPS, and quality of recordings by channel, and by recording type of standard / event.

You can check frame rates and data transfer amount of Full Frame and Key Frame recordings for each channel, and set the transfer limit for recordings.

Setting NVR Recording



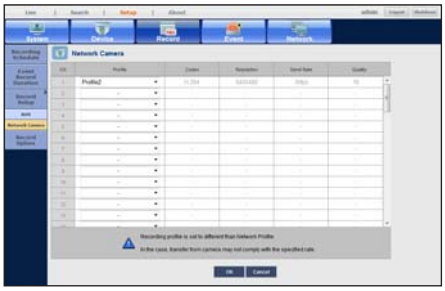
- Standard, Event : Configures Standard recording and Event recording.
  - Full Frame : Records all frames fed by the camera.
  - Key Frame : Records only key frames fed by the camera.
    Actual recording rate may differ from camera settings. In general, 1 to 2 frames per second are recorded.
  - OFF : No recording is made.

- Full Frame : Shows the amount of received data for full frame recording.
- Key Frame : Shows the amount of received data for key frame recording.
- Bitrate Limit : Shows allowed maximum limit of data bitrate, per channel.
- Audio : Specify whether to record the sound received from the camera or not.
- : Displays corresponding recording status of each channel.
- : Updates corresponding recording settings of each channel.

- If a channel's data transfer exceeds defined allowed limit, then it may affect to other channels, and may force switching to <**Key Frame**> recording even when the channel is configured to <**Full Frame**> recording mode. For Key Frame recording channels, the icon for limited recording appears on the live screen's top side.
  Press the < > button to make icon of limited recording disappear. If the transferred data exceeds the limit again, it will reappear.
- If a channel name is displayed in yellow, the camera profile of the channel is replaced with one other than assigned due to problem.
  Check the channel information to see the applied profile to the channel listed in yellow.

Setting the network camera's recording profile

You can configure the video profile settings for instructing the network camera (connected to each channel) to make recording.

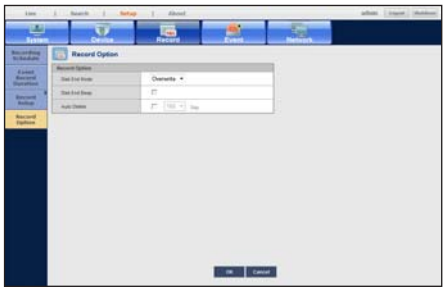


- You can configure the settings only for the profiles that are supported by the camera.
- If the profiles used for recording and network are different, camera's video feed may not comply with the frame rate as specified in the camera.

- Profile : Select a record profile for the connected camera.
- Codec : Show the codec information for the selected record profile.
- Resolution : Display the resolution for the selected record profile.
- Send Rate : Display the baud rate for the selected record profile.
- Quality : Display the video quality for the selected record profile.

Record Option

You can set the recording to stop or overwrite when the HDD is full.



- Disk End Mode : Select a HDD repetitive recording type.
  - Overwrite : If the HDD is full, this will overwrite the existing data and keep recording.
  - Stop : If the HDD is full, this will stop recording automatically.
- Disk End Beep : If you select <**Stop**> for the disk end mode, this button will be active. Specify the use of beep when the HDD recording ends.
  If you check it, the beep will sound on the disk full and the recording stops.
- Auto Delete : If you check this option, the period list box is active. Specify the deletion period to delete any earlier data than the specified date. However, you can search for data from the current time to the selected date.

▪ If you press <**OK**> when you have completed your settings, all the existing data earlier than the specified period will be deleted automatically. So it is recommend to backup the previous data if necessary for later use.

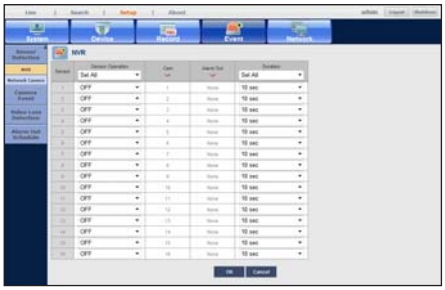
SETTING THE EVENT

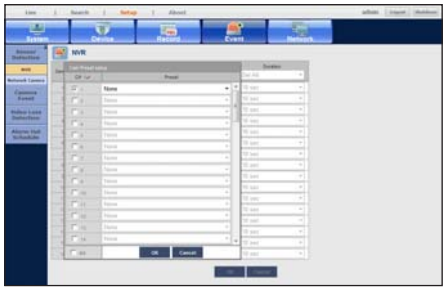
You can configure settings regarding event recordings of sensor, camera event and video loss event.

Sensor Detection

You can set the sensor's operating condition and connected camera, as well as alarm output and its duration.

Setting NVR Sensor Detection





- Sensor Operation : Sets the operation mode of sensors.
  - <**N.O (Normal Open)**> : Sensor is opened. If the sensor is closed, it generates alarm.
  - <**N.C (Normal Close)**> : Sensor is closed. If the sensor is open, it generates alarm.
- Cam : Select a channel to be connected to the sensor.
  If selected camera, "**Cam Preset setup**" window appears.
  Select a channel and setup the preset.
  - Preset setup can be done in PTZ mode.
- Alarm out : Sets the alarm output method.
  - For further information on alarm output, refer to "**HDD Alarm Setting**". (Page 68)
- Duration : Sets the duration of alarm signal and alarm sound.

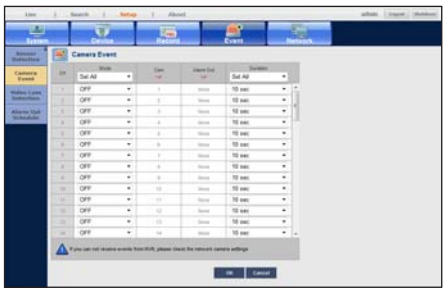
Setting Network Camera Sensor Detection

- Sensor Operation : Sets whether to operate the network camera sensor connected to each channel.
- Cam : Select a channel to be connected to the sensor.
  If selected camera, "**Cam Preset setup**" window appears.
  Select a channel and setup the preset.
  - Preset setup can be done in PTZ mode.
- Alarm out : Sets the alarm output method.
  - For further information on alarm output, refer to "**HDD Alarm Setting**". (Page 68)
- Duration : Sets the duration of alarm signal and alarm sound.

- If the connected network camera that has configured the alarm in/out settings triggers an alarm, NVR will perform the alarm out.

Camera Event

You can set whether to react to camera events (motion detection, video analysis, audio events) and alarm output / time.



- Mode : Select whether to react to camera events or not.
- Alarm Out : Sets the alarm output method.
- Duration : Sets the duration of alarm signal and alarm sound.

- The NVR generates alarm output only when the connected network camera is configured to detect events and an actual event is detected.

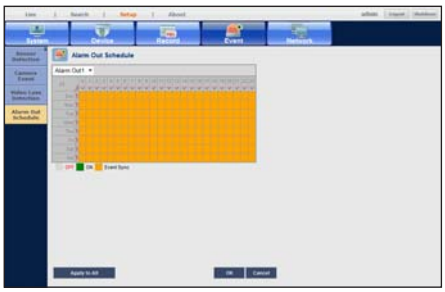
Video loss detection

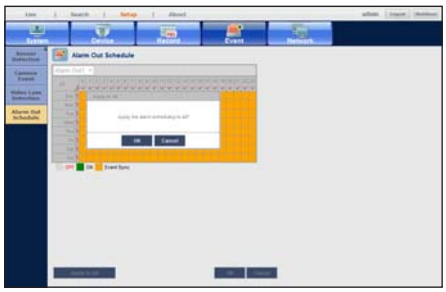
You can set the camera so that the camera can trigger the alarm if it is disconnected or the video is lost due to unstable network connection.

- Video Loss State : Specify the use of video loss detection.
- Alarm Out : Select an alarm output method.
- Alarm Duration : Specify the duration of the alarm output with the beep.

Alarm Out Schedule

You can set the conditions and operating hours for scheduled alarms.





- Alarm Out : Sets the alarm output method.
  - For further information on alarm output, refer to "**HDD Alarm Setting**". (Page 68)
  - <**ON**> : Marked in green, and always generates alarm on scheduled time.
  - <**OFF**> : Marked in black, no alarm is generated even if an event occurs.
  - <**Event Sync**> : Marked in orange, generates alarm only when an event occurs.
- Apply to All : Applies the configured schedule to all alarms.
  - For more information about how to set time, refer to "**To set the recording schedule**". (Page 69)

- When the alarm is generated on the scheduled time, you can stop the alarm by canceling the schedule.

NETWORK CONFIGURATION

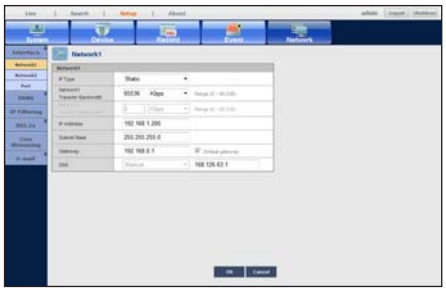
It provides networked monitoring of Live screen from a remote place, and supports mail forwarding function with events. You can configure the network environment which enables such functions.

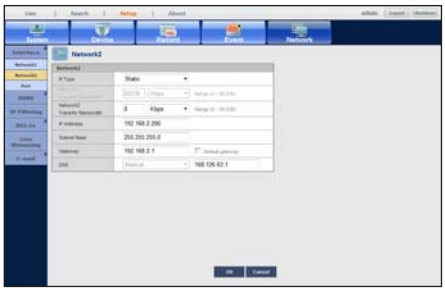
Interface

You can set the network connection route and protocol.

Network1/Network2 connection settings

Sets the protocol and environment of the network.





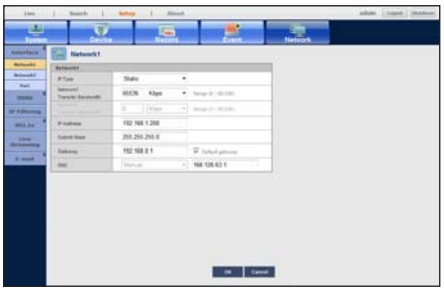
- IP Type : Sets the network connection mode.
- Network1 / Network2 Transfer Bandwidth : Enter the maximum amount of upload data bandwidth for each network.
  Check the assigned setting in Connection Mode before entering your value.
  The maximum amount of network retransmission is limited to 64MB for both network1 and 2. Network1 is set to use maximum bandwidth by default.

- Even though Network1 and Network2 are assigned with IP addresses from the same range, only the Network1 becomes accessible if they are connected to physically different networks.
- Even when only one Ethernet port of Network1 and Network2 is connected to the network, both Network1 and 2 become accessible if they are assigned with Static IP addresses in the same range.

- IP Address, Subnet Mask, Gateway and DNS
  - For <**Static**> : You can directly input IP address, Gateway, Subnet Mask and DNS.
  - For <**DHCP**> : IP address, Gateway, and Subnet Mask are set automatically.
  - For <**PPPoE**> : IP address, Gateway, and Subnet Mask are set automatically.
- ID, Password : In case you selected PPPoE, provide the "**ID**" and its "**Password**".

- DNS server for <**DHCP**> and <**PPPoE**> can be set by user only if you selected <**Manual**>.
- The data amount received by the Live Viewer is limited to the sum of all distributed data amount per channel, based on the assigned total retransmission data amount.
  Due to this reason, the actual received video data amount in live mode may be less than data transmission amount specified in settings. To make the video look more smoothly, you can increase data traffic with bitrate setting and watch the video in a single screen mode or in a split screen mode of a smaller number of channels.

Setting the Network Connection without Router



• **Static**

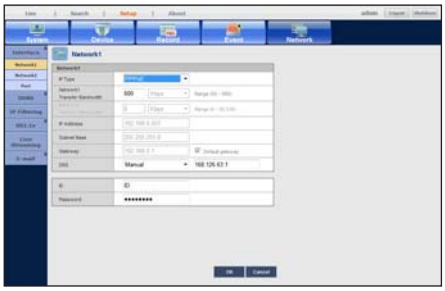
- Internet connection : Static IP ADSL, leased line, and LAN environments allows connection between the NVR and remote user.
- NVR Network Settings : Set the <**Interface**> in <**Network**> menu of the connected NVR to <**Static**>.

▪ Consult your network manager for IP, Gateway and Subnet Mask.

• **DHCP**

- Internet connection : Connect the NVR directly to a cable modem, DHCP ADSL modem or FTTH network.
- NVR Network Settings : Set the <**Interface**> in <**Network**> menu of the connected NVR to <**DHCP**>.

▪ If IP is not assigned within 1 minute, it is set to the previous static IP.



• **PPPoE**

- Internet connection : An PPPoE modem is directly connected to the NVR, where the PPPoE connection requires user ID and password.
- NVR Network Settings : Set the <**Interface**> in <**Network**> menu of the connected NVR to <**PPPoE**>.

▪ PPPoE <**ID**> and <**Password**> should be the same to the PPPoE user information.
If you don't know the ID and password, consult your PPPoE service provider.

Setting the Network Connection Using Router

■ To avoid IP address conflict with the NVR's static IP, check followings :

• Setting the NVR with a static IP

- Internet connection : You can connect the NVR to a router which is connected to an PPPoE/Cable modem or a router in a Local Area Network (LAN) environment.

• Setting the NVR Network

1. Set the <**Interface**> in <**Network**> menu of the connected NVR to <**Static**>.
2. Check whether the set IP address is in the static IP range provided by the Broadband Router.
   IP, Subnet Mask and Gateway : Consult your network manager.
   ■ Check whether the set IP address is in the static IP range provided by the Broadband Router.

■ If a DHCP server is configured with starting address (192.168.0.100) and end address (192.168.0.200), you should set the IP address out of the configured DHCP range (192.168.0.2 ~ 192.168.0.99 and 192.168.0.201 ~ 192.168.0.254).

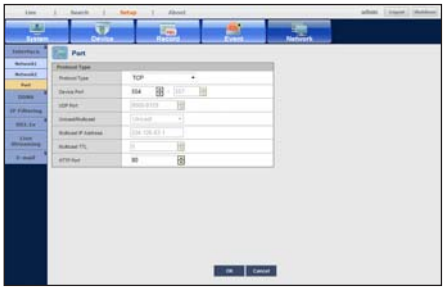
3. Check the Gateway address and subnet mask are equal to those set in the Broadband Router.

• Setting the DHCP IP Address of the Broadband Router

1. To access the Broadband Router's configurations, open a web browser on the local PC that is connected to the Broadband Router and enter the router's address (ex : http://192.168.1.1).
2. At this stage, make the local PC's windows network configurations to the below example :
   Ex) IP : 192.168.1.2
   Subnet Mask : 255.255.255.0
   Gateway : 192.168.1.1
   - Once connected to the Broadband Router, it prompts with password. While entering nothing to the User Name field, enter "**admin**" into the password field and press <**OK**> to access the router configurations.
   - Access the router's DHCP configuration menu and set its DHCP server activation, and provide the start and end address.
     Set the start address (192.168.0.100) and end address (192.168.0.200).

■ Above steps may differ from the router devices depending on the manufacturer.

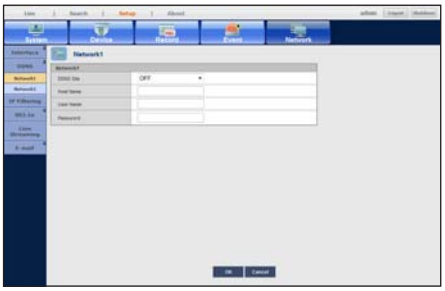
Setting Port



- Protocol Type : Select the protocol type between TCP and UDP.
  - If you select UDP, the items of UDP Port and Unicast/Multicast will be active.
  - If set it to TCP, the Device Port item will be active.
- Device Port : Enter the connectable port number. Initially, <**554**> is set.
  - TCP : It has better stability and lower speed when compared to UDP, and recommended for internet environments.
- UDP Port : Initially, <**8000~8159**> is set. It increases / decreases by 160.
  - UDP : It has less stability and faster speed when compared to TCP, and recommended for local area network (LAN) environments.
- Unicast/Multicast : Select one between Unicast and Multicast.
  If selected Multicast, Multicast IP and TTL are activated.
  - Unicast : Transfers data (UDP, TCP) individually to each connecting client.
  - Multicast : Multiple client can receive the data (only in UDP) without putting additional traffic load to the network.
- Multicast IP Address : User can directly input.
- Multicast TTL : Select from 0 ~ 255. Initial value for the TTL is set to <**5**>.
- HTTP Port : Enter the port number for the Web Viewer. Initially, it is set to <**80**>.

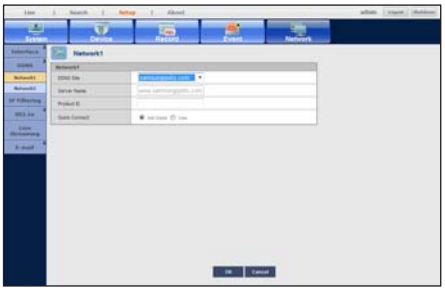
DDNS

You can set the DDNS site for a remote user's network connection.



- DDNS Site : Specify the use of DDNS and select a site that you registered.
- Host Name : Provide the host name that you registered with the DDNS site.
- User Name : Provide the user ID that you registered with the DDNS Site.
- Password : Provide the password that you registered with the DDNS site.

- If you select <**OFF**>, the input box will be inactive.
- If you select <**samsungipolis.com**>, the Server Name field is disabled.



- Quick Connect : Appears if the <**samsungipolis.com**> is selected for a <**DDNS Site**>.
  To use the function, set to <**Use**> after connecting the NVR to a UPnP router.

- If canceled during Quick Connect configuration, it automatically switches to <**Not Used**> and saved.

To check Quick Connect status

A progress bar and its message appears for a Quick Connect.

- **Quick Connect Success** : Message for a successful connection.
- **Invalid Network Configuration** : Message appears if the network configuration is not valid. Check the configuration.
- **Please enable UPnP function of the router** : Message appears if the router requires UPnP function enabled.
- **Failed to find the router** : Message appears if the router is not found. Check the router's configurations.
- **Please restart the router** : Message appears if the router should be restarted.
- **The port is used by another device.** : Please change the port number.

DDNS Setting

DDNS is a short form of Dynamic Domain Naming System.
DNS (Domain Name System) is a service that routes a domain name consisting of user friendly characters (ex : www.google.com) to an IP address consisting of numbers (64.233.189.104).
DDNS (Dynamic DNS) is a service that registers a domain name and the floating IP address with the DDNS server so that the domain name can be routed to the IP address even if the IP is changed in a dynamic IP system.

- **Setting DDNS in the NVR**

  Set <**Protocol Type**> in the <**Protocol**> menu of the connected NVR to the following :

  Ex) Protocol Type : TCP
  Device Port : 554 ~ 557
  DDNS Site : iPOLiS

- **DDNS Settings of the Router**

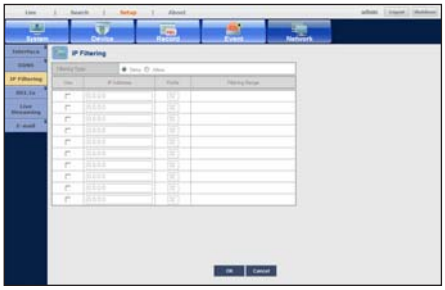
  Select the corresponding menu for the network transfer protocol of the router.

- **Setting up UPnP of Router**

  Refer to the router's documentation to enable the UPnP function of the router.

IP Filtering

You can create a list of IPs that you want to grant or deny access to them.



- Filtering Type :
  - Deny : Access from the IP(s), which is(are) added to the filtering, will be restricted.
  - Allow : Access from only IP(s) added to the filtering will be accepted.
- Use : Select the check box(es) of the IP(s) to use IP filtering.
- IP Address : Enter the IP address to filter.
- Filtering Range : If you enter the IP address and its Prefix, the range of allowed/denied IP addresses appears.

▪ If the camera's IP is included in the Deny list or excluded in the Grant list, the access to the camera is blocked.

802.1x

When connecting to a network, you can select whether to use the 802.1x protocol and install corresponding certificate.

802.1x is an authentication system between the server and client to protect the data transferred in network from hacking, virus, leakage, etc.

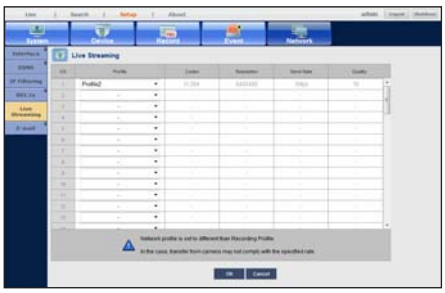
By using the 802.1x authentication, unauthenticated client is blocked to access, only authenticated users are allowed to communicate, and security is considerably improved.

- IEEE 802.1x : Specify the use of the 802.1x protocol.
- EAPOL Version : Select the EAPOL Version to use as a protocol.
  - Some switch hubs may not work when Version <**2**> is selected. Select Version <**1**> for general cases.
- ID : Enter the ID provided by RADIUS server administrator.
  - If your provided ID does not match with the ID in the client certificate, it is not processed properly.
- Password : Enter the password provided by RADIUS server administrator.
  - If your provided password does not match with that of client's private key, it is not processed properly.
- CA Certificates : Select if it is an authorized certificate including public key.
- Client Certificates : Select if it is an authorized certificate including client's authentication key.
- Client Private Key : Select if it is an authorized certificate including client's private key.

- To build a 802.1x environment, administrator should use RADIUS server.
  Also, the switch hub connected to the server should support the 802.1x.
- The time settings in RADIUS server, switch hub, and NVR device must be synchronized. Otherwise, communication may be blocked.
- If a password is assigned to the client's private key, server administrator should confirm the ID and password.
  The ID and password allow up to 30 characters each. (However, only alphanumeric characters and "-", "_", "." are allowed.)
  Accessing files not locked with password is allowed without entering the password.
- The 802.1x protocol adopted by the NVR is EAP-TLS.
- All the 3 certificates must be installed to properly use the 802.1x environment.

Live Streaming

You can configure the profile to transfer the live video of each channel via the network.



- Profile : Select a network profile for the connected camera.
- Codec : Show the codec information for the selected network profile.
- Resolution : Display the resolution for the selected network profile.
- Send Rate : Display the baud rate for the selected network profile.
- Quality : Display the video quality for the selected network profile.

■ If the profiles used for network and recording are different, camera's video feed may not comply with the frame rate as specified in the camera.

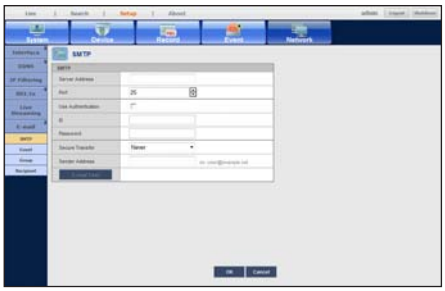
E-mail

You can send an e-mail to a NVR-registered user at a specific time interval, or if an event occurs.

■ If the camera is set to <**OFF**> or the channel's event is Video Loss, a notification is sent to the designated email address only in text.

SMTP Setting

Sets the SMTP mail server.

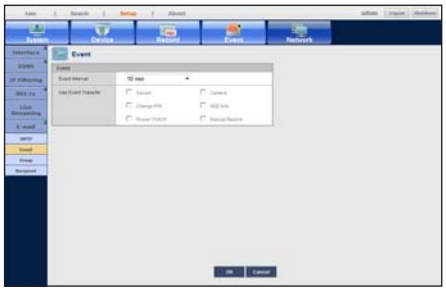


- Server Address : Displays the connected server type.
- Port : Sets the communication port.

- Use Authentication : Check this if the SMTP server uses user authentication.
  The account input box will be activated.
- ID : Enter a user to use authentication when connecting to the SMTP server.
- Password : Enter the password of the SMTP server user.
- Secure Transfer : Select one from <**Never**> and <**TLS (if available)**>.
- Sender Address : Use the virtual keyboard to enter the sender's e-mail address.
- E-mail Test : Conducts the test on the server settings.

Event Setting

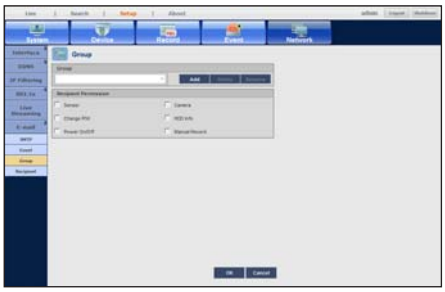
You can set the interval and type of the event that will be sent to the user.

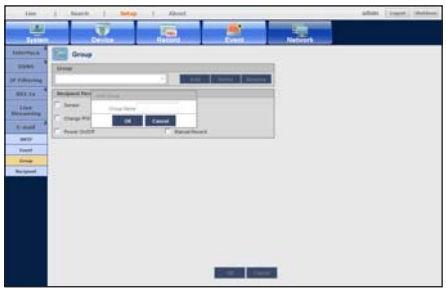


- Event Interval : Set the event interval.
  - If a series of events occurs, the e-mail will be sent at the specified interval, not on each event.
- Use Event Transfer : Select an event type to send if an event occurs.
  If the selected event occurs, the e-mail will be sent to the group that has the recipient authority.

Group Setting

You can set the group to whom the e-mail is sent, and specify the permission for each group.
Apart from the NVR user group, you can add email recipients from the <**Recipient**> item.

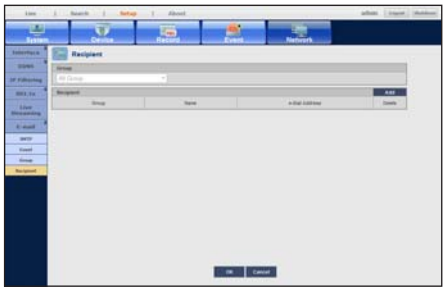


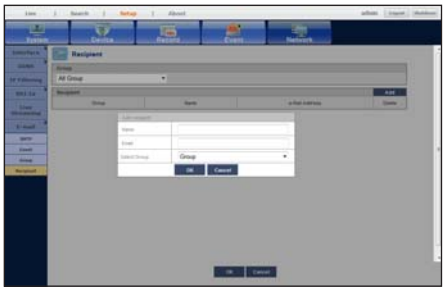


- Group : Specify the recipient group who receives the email event notification.
  - Add : Click the button to display the added group name input dialog. Enter the name, and click <**OK**> to add the group.
  - Delete : Deletes the selected group.
  - Rename : You can reset the recipient permission of an existing group.
- Recipient Permission : Set the permission of the recipient group.

Recipient Setting

You can add/remove a recipient(s) to/from the specified group and edit the group if necessary.





- Select a recipient group who receives the email notification.
  The group list will be displayed only if you added at least one group to the <**Group**> item.
  - Add : You can select the recipient's name, e-mail and group.
    You should have created a group in the <**Group**> menu item before you can add a user to the group.

PRODUCT SPECIFICATION

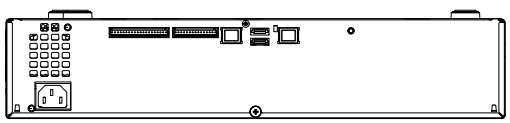
Item		Details
Display		
Network Camera	Input Channels	Max. 64CH
	Input Bandwidth	100Mbps
	Resolution	CIF ~ 5M
	Protocols	Onvif(Samsung, Axis, Sony, Panasonic), Samsung
Live	Local Display	N/A
	Web	1 / 4 / 9 / 16 / Sequence
Performance		
Operating System	Embedded	Linux
Record	Compression	H.264, MPEG-4, MJPEG
	Recording Bandwidth	100Mbps
	Resolution	CIF ~ 5M
	Type	Normal, Scheduled, Event (Pre/Post)
	Event Trigger	Motion Detection, Alarm Input, Video Loss, Audio Detection, Pass, Exit, Appear, Disappear, Face Detection
	Event Action	E-Mail, PTZ Preset, Alarm, Buzzer
Play	Simultaneous playback	4 channels
	Resolution	CIF ~ 5M
	Playback Control	Fast Forward/Fast Backward, Move one step up/Move one step down
Storage	Built-In	Max 8EA
	External	e-SATA(2 Port)
Backup	File backup(Via Web)	JPG, AVI, BMP, PNG
	Function	Singlei channel Play, Date-Time/Title display
Sensor	I/O	input 16 / output 4
Audio	Input	64 channels (network)
	Compression	G.711, G.726

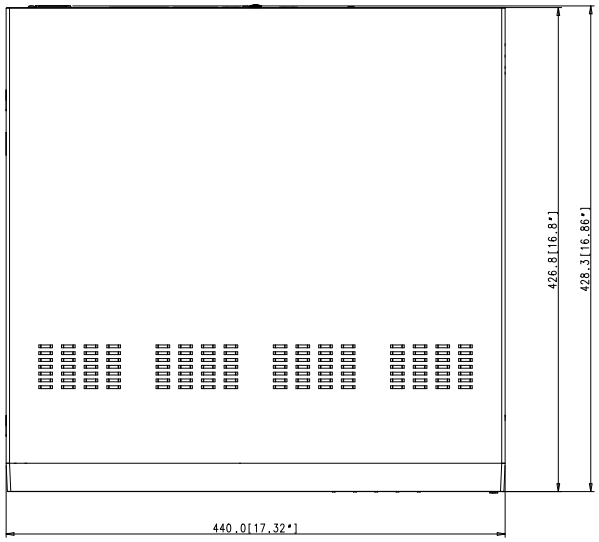
Item		Details
Network		
Interface		RJ-45, Gigabit Ethernet x2
Protocol		TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTSP, NTP, HTTP, DHCP, PPPoE, SMTP, ICMP, IGMP, ARP, DNS, DDNS, uPnP, ONVIF NVC
DDNS		Samsung iPolis DDNS
Transmission Bandwidth		64Mbps
Max Remote Users		Search(3) / Live unicast(10) / Live multicast(20)
Max Remote Channel		Max 160CH
IP		IPv4
Security		User access Log IP Filtering 802.1x
Web Viewer	Language (24ea)	English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish, Denish, Portuguese, Czech, Polish, Turkish, Rumanian, Serbian, Dutch, Croatian, Hungarian, Greek, Finnish, Norwegian, Thai
	OS	Supported OS : Windows XP(service pack 2 or above), Vista, 7 Supported Browser : MS Internet Explorer 7.x, 8.x, 9.x
Viewer Software	Type	NET-i viewer, Webviewer
	Synchronization	Live, Search, Setup
Functions		
Camera Setup	Register	Auto, Manual
	Setup Items	IP Address, Profile select
PTZ	Control	Via Webviewer
	Preset	255 Presets

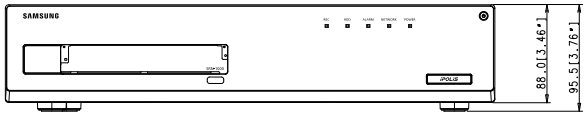
Item		Details
System		
Log	Log List	System log, Up to 20,000 log records for each Event Log
Environmental		
Operating Temperature / Humidity		+0°C to +40°C
Humidity		20% ~ 85%
Electrical		
Power		100 to 240 VAC ±10%; 50/60 Hz, 4~1.5A
Power Consumption		45W
Mechanical		
Color / Material		Black / Metal
Dimension (WxHxD) H (leg not included)		W440.0 x H88.0 x D426.8 mm (W17.32 x H3.46 x D16.80 inch)
Weight		6.18 Kg (HDDx1)
Standards		
Approvals	Safety	NRTL
	EMC	CE, FCC, Gost-R, CCC, KCC

PRODUCT OVERVIEW

unit : mm (inches)







DEFAULT SETTING

This returns the factory default settings.

To reset the system, move to "**System Management** > **Settings** > **Load Factory Default**" and press the <**Default**> button.

Category	Details			Factory Default
System	Date/Time/Language	Date/Time/Language	Date	YYYY-MM-DD
			Time	24 hours
			Time Zone	GMT
			Time Sync.	OFF
			DST	OFF
			Language	English
	Permission Manage	Admin	ID	admin
			Password	4321
		Group	Group	None
			Group Authority	
		User	Group	All Group
		Setup	Restricted Access	Backup/Record Stop/ Search/PTZ/Remote Alarm Out/Shutdown
	System Manage	System Information	Device Name	NVR
Device	Camera	Channel Setup	Video	ON
			Audio	OFF
			Camera Name	CAM 01 ~ CAM 64
	Storage Device	HDD Alarm	Check Alarm Output Port	BEEP
			Duration	Continuous
			Replace Alarm Output Port	BEEP
			Duration	Continuous
Record	Recording Schedule	CH1~CH64	Both(Cont&Evnt)	
	Event Record Duration	Pre Event		OFF
		POST Event		1 min
	Record Setup	NVR	Standard	Full Frame
			Event	Full Frame
			Bitrate Limit	1.5M
			Audio	OFF
	Record Option		Disk End Mode	Overwrite
			Disk End Beep	OFF
			Auto Delete	OFF(180)

Category	Details			Factory Default
Event	Sensor Detection	NVR	Sensor Operation	OFF
			Cam	Camera No.
			Alarm Out	None
			Duration	10 sec
		Network Camera	Sensor Operation	OFF
			Cam	Camera No.
			Alarm Out	None
			Duration	10 sec
	Camera Event		Mode	OFF
			Alarm Out	None
			Duration	10 sec
	Video Loss Detection		Video Loss State	OFF
			Alarm Out	None
			Alarm Duration	10 sec
	Alarm Out Schedule			Alarm Out1
Network	Interface	Network1	IP Type	Static
			Network1 Transfer Bandwidth	65536(kbps)
			IP Address	192.168.1.200
			Subnet Mask	255.255.255.0
			Gateway	192.168.1.1
			DNS	168.126.63.1
		Network2	IP Type	Static
			Network2 Transfer Bandwidth	0(kbps)
			IP Address	192.168.2.200
			Subnet Mask	255.255.255.0
			Gateway	192.168.2.1
			DNS	168.126.63.1
		Port	Protocol Type	TCP
			Device Port	554~557
			UDP Port	8000~8159
			Unicast/Multicast	Unicast
			Multicast IP Address	224.126.63.1
			Multicast TTL	5
			HTTP Port	80

Category	Details			Factory Default
Network	DDNS	Network1	DDNS Site	OFF
		Network2	DDNS Site	OFF
	IP Filtering		Filtering Type	Deny
			Use	OFF
			IP Address	0.0.0.0
			Prefix	32
	802.1x	Network1	IEEE 802.1x	OFF
			EAPOL Version	1
			CA Certificates	Not Available
			Clint Certificates	Not Available
			Clint Private Key	Not Available
		Network2	IEEE 802.1x	OFF
			EAPOL Version	1
			CA Certificates	Not Available
			Clint Certificates	Not Available
			Clint Private Key	Not Available
	E-mail	SMTP	Server Address	
			Port	25
			Use Authentication	OFF
			Secure Transfer	Never
		Event	Event Interval	10 min
			Use Event Transfer	OFF
		Group	Group	OFF
			Recipient Permission	OFF

TROUBLESHOOTING

Problem	Action
The system does not turn on and the indicator on the front panel does not work at all.	• Check if the power supply system is properly connected. • Check the system for the input voltage from the power source. • If the problem persists even after you have taken the above actions, check the power supplier and replace it with a new one if neccessary. • Check inside if the cables are properly connected. (SMPS, FRONT)
Video input is connected, but some channels do not display corresponding videos.	• Check if the camera is properly supplied with power. • Check the video output connecting the camera's webviewer. • Check if the network port is properly connected and the network setting is set correctly. • Replace the hub connected to your network with one supporting Gigabit communication. Video output complies with the specification of the connected hub. • Check the <**Network**> item in <**Setup**> tab of the Web Viewer. If network bandwidth is set too low, video may not properly display.
Pressing <**REC**> button on the Live Viewer does not turn on REC LED and does not start recording.	• Check if there is a free space on the HDD for the recording. • Check if the record mode is set to **ON** in the record mode setting.
The cursor will not move to the Start button when I start the calendar search.	• Check if the channel and the date that you want to play are marked with the V symbol. Both channel and date should be checked before you can start playing with the Start button.
Cannot stop alarm by pressing the < > button of the Web Viewer, due to continuing alarm events.	• Modify the <**Event**> setup in <**Setup**> tab of the Web Viewer. 1) To stop alarm sound : Event Recording Mode – Alarm (camera event/ video loss) – Delete the Alarm Out. 2) To stop event : Event Recording Mode – Alarm (camera event/video loss)- Turn off the mode.
No response controlling PTZ in the live viewer	• Check the registered Camera if it support PTZ function.
The camera is not connected or the PC fails to connect to the product.	• Check if the network cable is connected properly. • Ensure that you have set <**Network**> – <**Interface**>. • Check the IP setting of the PC or camera. • Try the Ping Test. • Check if there is a different device near the product uses the same IP.
The Live screen is too bright or too dark.	• Check the video settings of the registered camera.

Problem	Action
Not all of multiple external HDDs that I have installed on the NVR are recognized by the NVR even if I configured the necessary settings properly.	• It may take time to recognize multiple external HDDs. Try again in a minute. If the problem persists and not all of the external HDDs are recognized, that is highly likely to an error of the external HDD it self. Try with a different HDD or HDDs.
The time bar is not displayed in Search mode.	• The timeline can switch between normal and extension mode. In extension mode, the time bar may not be displayed in the current timeline. Switch to normal mode or use the left or right button to navigate through the time bar.
The “NO HDD” icon and an error message are displayed.	• Check the HDD for connection. If the problem persists in a normal condition, contact the nearest service center to have the HDD checked by the service personnel.
The front LEDs (ALARM, REC) keep blinking after booting up the system.	• The front LEDs (NO HDD, HDD FAIL or FAN ERROR) keep blinking. - You can check the description about corresponding failure on top left side of the Live screen after connecting.
I have installed an additional HDD on the NVR but it does not recognize the HDD.	• See the compatibilty list to check if the additional HDD is supported by the NVR. For the compatibility list, contact the retailer where you purchased the NVR.
I have connected an external storage device (external eSATA HDD) to the NVR but the NVR seems not to recognize it.	• See the compatibility list of external storage devices to check if the connected device is supported by the NVR. For the compatibility list, contact the retailer where you purchased the NVR.
If I press the ESC key in full screen mode of the WebViewer, the system does not switch to a normal split mode.	• Press the ALT+TAB keys to select ‘ACTIVE MOVIE’ and press the ESC key again. The system will switch to a normal split mode.
I forgot the password.	• Contact the NVR administrator for help.

Problem	Action
Frame rate of the actual recording does not match that of configured to the camera.	• If multiple profiles were applied to one camera for video transmission, the actual video stream can be serviced by the camera at a lower frame rate than specified. Configure your camera to use one profile for data streaming as possible. For example, if you set the same profile for recording and network profiles, the actual recording is made at the specified frame rate. Note that allowed limit bitrate for recording / recording settings should be set to be bigger values than that of camera's feed.
Recording does not work.	• If your player does not display a Live image at all, that indicates recording does not work so first check if you see an image on the screen. • Recording does not work if the recording settings are not properly configured. 1) Press the < > icon on the Web Viewer's Live tab to start recording immediately. 2) Scheduled Record: Specify a desired time in Menu – Record – Recording Schedule. Recording will start at the specified time. - <**Continuous**> Record: Recording will proceed in any conditions at the specified time. - <**Event**> Record: When an event occurs, recording will perform only if the event is of alarm, motion detection and video loss. If there is no event found, recording will not perform. - <**Continuous / Event**> Record: If there is no event found, Continuous recording will perform. Whereas, if an event occurs, Event recording will perform.
The image quality of the recording data is not good.	• Increase the resolution and quality level in Menu – Record – Quality / Resolution. 1) Resolution: Select a bigger size when specifying the recording size. The recording image in the CIF format shows a deteriorated quality as it is enlarged from a small-sized image. 2) Record Quality: Specify a bigger level for the recording quality. • If you increase the resolution and the recording quality, the data size increases accordingly. So the HDD will be filled faster. Overwriting will overwrite the existing data so recording will proceed at a shorter interval.

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